



**Award-winning  
Enviro Loo  
waterless sanitation  
system uses  
Bloodhound's FILE13  
for remote service  
technicians and field  
asset management**



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## Introduction

Motivated by a desire to overcome the prevailing challenges in waste management systems in South Africa, research into waterless and dry sanitation units to replace unsanitary options such as pit latrines or buckets began in 1985. Enviro Loo, a product of Enviro Options, is a 100%, South African patented product started in 1993 by Dr Brian La Trobe. Today, Enviro Options develops cost-effective and hygienic waterless sanitation systems for global use. To date more than 125 000 Enviro Loos have been installed in 35 countries helping over 2 million people to contribute to the socio-economic development of their communities. Because the company's self-contained product is cost-effective, efficient, hygienic, and environmentally sustainable, it is reaping tremendous financial reward, conserving the environment, and providing life-saving sanitation to some of the three billion people around the world who live without affordable and sanitary waste disposal systems.

The Enviro Loo system works through an innovative method of isolating human waste and rendering it stable and odourless by drying and evaporating it by using solar energy, wind power and enzymes. The Enviro Loo product has won many prestigious awards including the Laureate - United States Tech Award for Innovation in 2005, the Frost & Sullivan Southern African Dry Sanitation Company of the Year Award in 2017 and the Eco-Logic Gold Award for Water Conservation in 2019. As Enviro Loo's global footprint increased, so did their services. The company now offers the option of a two-year service and maintenance contract with the purchase of one of their products. The contract includes quarterly service visits by trained consultants while the facilitation team works towards achieving community buy-in into the technology and ensures that users are trained in its operation. However, Enviro Loo realised that the company, which developed its current mobile workforce and asset management system, was unable to meet certain criteria that their expansion required. Consequently, they started looking at the market and joined forces with Bloodhound by adopting their File13 platform in 2020 which enabled them to accelerate business growth.



## The challenge

Enviro Loo often works with small, medium and micro enterprises (SMMEs) - these are local third-party subcontractors who service their sanitation units. Historically various challenges were experienced including fieldworkers bypassing the system, backend reporting exceptions and incorrect data collected as a result of using manual paper-based reporting systems. Often, workers on site would claim that the device was not working properly and because data collection and reporting were done manually, it was extremely difficult and time-consuming to pinpoint issues and attempt to audit whether services were performed at the right location and at the correct time.

At the time, Enviro Loo also had a management system in place that was not entirely fulfilling their requirements, causing backend issues and the lack of much-needed support. These challenges led to the realisation that a more fool-proof system was required that would provide real-time evidence that the servicing was completed correctly and on the right Enviro Loo unit. In other words, a system that could seamlessly track and monitor service teams and assets from installation through to year-on-year service and maintenance schedules and so eliminate any grey areas.



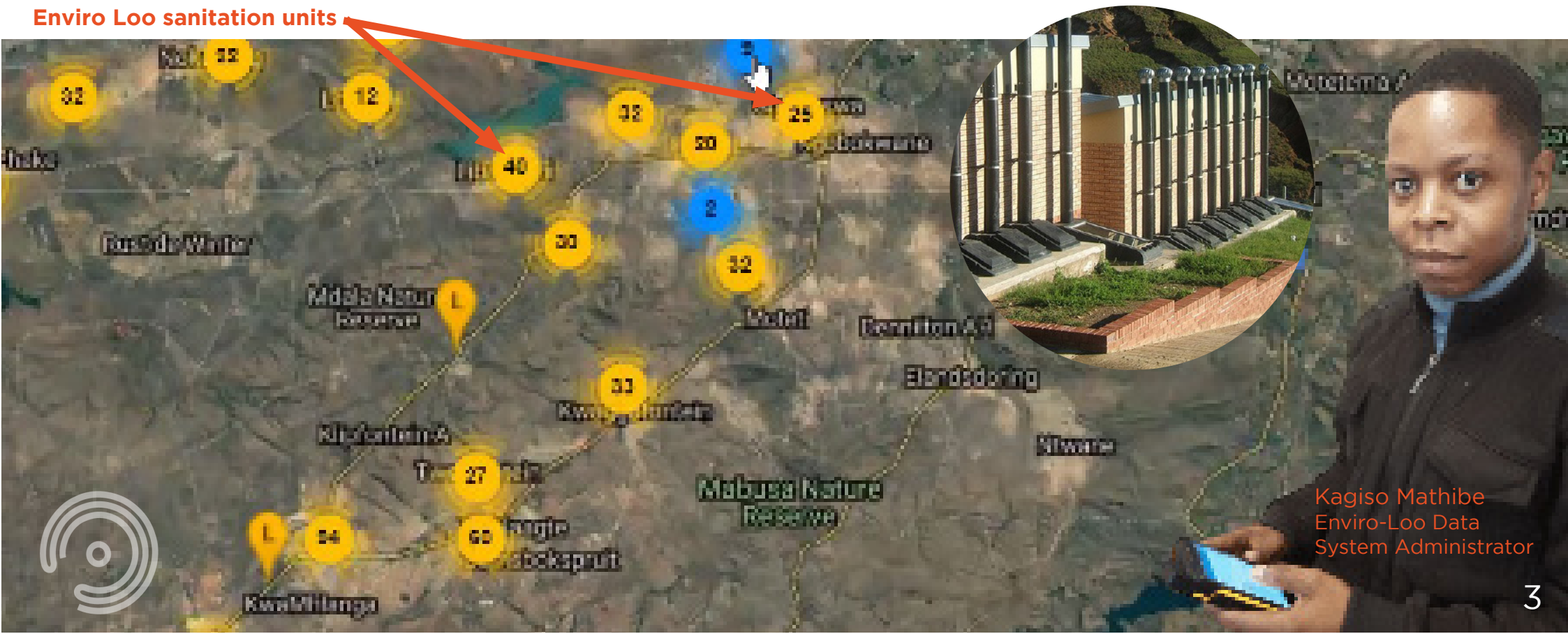
## Onboarding Bloodhound FILE13

Once Enviro Loo realised that a system upgrade was unavoidable and after some internal discussions, a few companies were earmarked for this project. At the start of 2020, Bloodhound's product stack was identified as the best fit for Enviro Loo's unique current and future requirements. Following various workshops and deliberations between all stakeholders, the go-ahead was given to Bloodhound to implement certain customised setups on their Observer Cloud Platform and FILE13 mobile field app to address all Enviro Loo's immediate requirements. One of the major changes that came about was the need to seamlessly link two backends.

“Bloodhound's willingness to adapt and customise their system to satisfy our business requirements which ultimately contributed to successfully linking the two backends was simply phenomenal”, says Roland Bishop, Head of Operations, Enviro Loo.

Bloodhound's FILE13 mobile app is an industry-leading workforce optimisation and equipment maintenance solution designed to ensure quality of service delivery. Its end-to-end paperless management system was a perfect fit for the ongoing equipment maintenance requirements of Enviro Loo's dry sanitation units.

### Enviro Loo sanitation units



The following key features and benefits of FILE13 easily convinced Enviro Loo that it was the right solution for their business requirements:

- FILE13 combines smart Internet of Things (IoT) that is, cloud-connected devices', components such as BTLE, NFC tags, QR codes and GPS to meet field asset maintenance requirements.
- It keeps a record of who last serviced the sanitation units and provides physical proof of presence and time spent during the service.
- FILE13 offers real-time escalation of non-compliance exceptions and automated daily escalation reports.
- Real-time GPS location tracking of fieldworkers.
- NFC tagging on individual assets to ensure transparent proof of presence during service delivery.
- FILE13 ensures that both legislative and regulatory requirements and standards such as OHS and ISO, are met.
- It proactively manages the complicated scheduling requirements of all the field sanitation units.
- Service technicians and fieldworkers can be monitored live from a single cloud-based platform (Observer), with a user-friendly interactive dashboard.

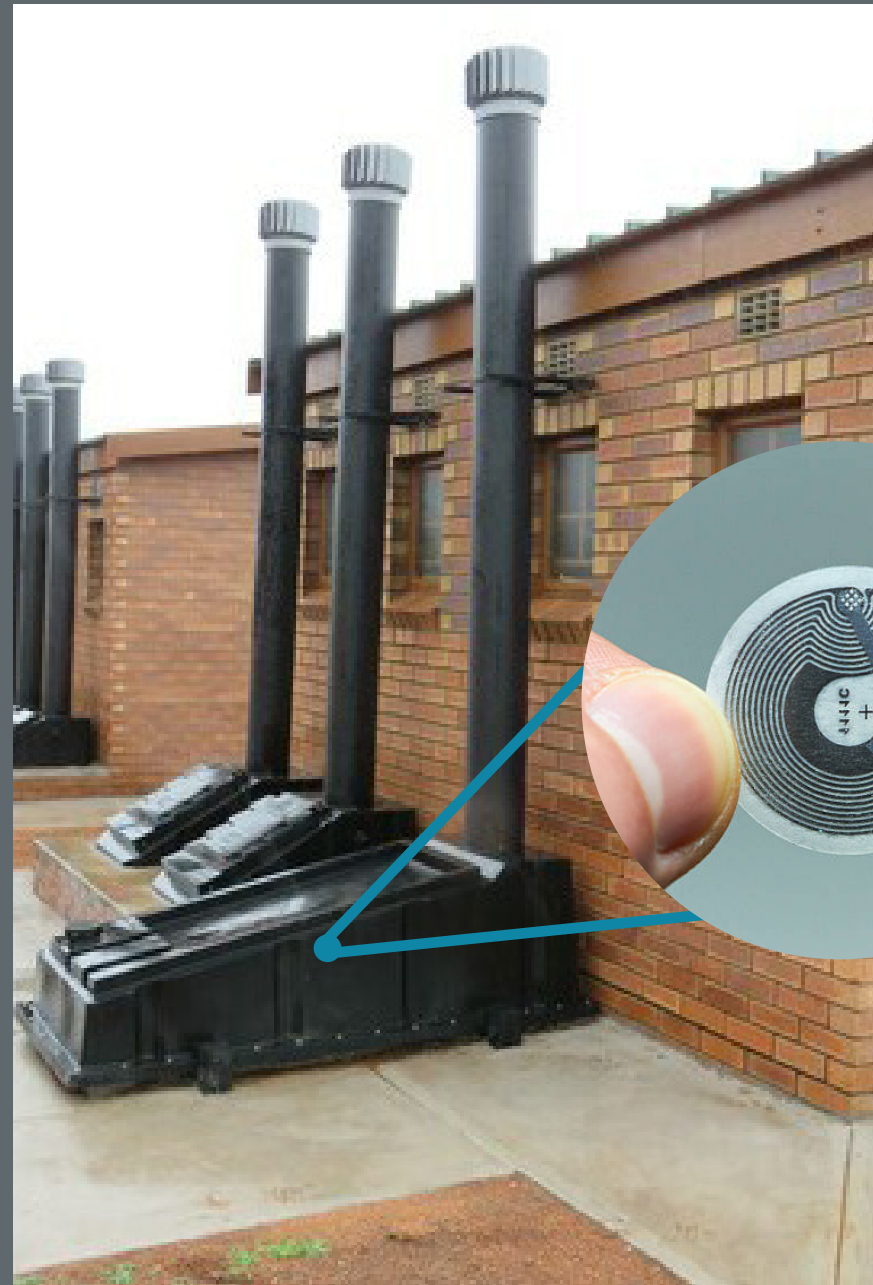


Photo: Embedded Near Field Communication (NFC) tag



## Effortlessly managing 1000s of sanitation units and collaborating with third-party subcontractors

Before Bloodhound came onboard, Enviro Loo did not use IoT tagging as part of their management solution. At the time, GPS location was predominantly used which meant that the system could be bypassed by, for example, claiming the system or the device was not working as there was no proof of presence or proof of service requirements. This had the potential of causing further issues such as incorrect records when downloading and auditing data. The previous service provider developed the system for them, but their backend soon became outdated and could not support the tempo at which Enviro Loo was expanding and rolling out new units.

One major differentiator that distinguishes Bloodhound's field asset management system from its competitors is its use of certain IoT technologies like Bluetooth Low Energy (BTLE) beacons and Near Field Communication (NFC) tagging. The FILE13 app can seamlessly (without tagging or scanning) recognise assets or locations that have a BTLE beacon assigned. NFC tags use passive short-range wireless technology that can be detected by NFC-enabled devices such as smartphones and requires the user to tap or scan to recognise the asset or location.

Bloodhound combines NFC and GPS information to identify Enviro Loo's field assets and mobile workforce in real time. As part of the onboarding process, NFC tags are installed on each Enviro Loo unit. These NFC tags are embedded inside each unit during the manufacturing process. Thereafter, the area where the Enviro Loo sanitation units will be installed, are geofenced and each tagged sanitation unit is grouped and added to the related site name, for example, a school or under-developed community.



## Eliminating grey areas and disputes

When the service technician enters the specific client site to perform the required service, FILE13 will list the Enviro Loo sanitation units that require servicing in that area. The user will proceed to each of the units and activate the service plan by simply scanning or tagging the relevant NFC tag. This process confirms that the correct workflow is used on the correct asset whereafter FILE13 will guide the user through the service plan with step-by-step instructions.

**“With the previous solution and GPS location tracking, fieldworkers would stand at one unit and service only one unit. With FILE13’s geofencing feature, it automatically picks up all the units in that environment that have to be serviced. Service workers cannot manipulate how many units were serviced for example servicing only one unit but claiming they have serviced ten units. This also eliminates payment disputes as payments are now made for the correct number of serviced units”, says Roland.**

With FILE13, the time spent per asset is monitored in detail to enforce quality and thoroughness of service. FILE13 will analyse all data that is entered during a service plan and ensure that any exception or non-compliance issues such as vandalism or damaged equipment are escalated and reported in real time. FILE13 will furthermore require the service technician to supplement the data with photographs and supply a more extensive description of the issue to serve as supporting evidence for any post-service reporting or potential investigations.

**“Enviro Loo is committed to providing our clients with accurate and instant information on services. Bloodhound’s end-to-end paperless management tool provides us with peace of mind that our sanitation units are serviced and maintained effectively while also meeting compliance levels at all times” says Mark La Trobe, Chief Operation Officer.**

SMMEs were recently asked to complete a survey noting their experience with FILE13. The feedback received was overwhelmingly positive with 100% of participants stating that they find the app easy to use; 90% enjoy working with FILE13 and found it easy to learn while 90% also indicated that they felt confident using the app. FILE13 evidently adds value to Enviro Loo’s operations which, in turn, builds company trust and loyalty with the SMMEs.



## From reactive reporting to proactive exception-based management

In the past, service reports and escalations were compiled manually. It was possible to include information that was not necessarily accurate and key information was often omitted. Previously there was no way to validate the information provided in the reports. FILE13 replaced this manual system with a proactive solution where digital validation is done using IoT technologies like NFC tagging and geolocation data. With FILE13, real-time “proof of presence” and “proof of service” holds fieldworkers accountable and ensures transparency and overall peace of mind of all parties. Since implementing FILE13, SMMEs’ service levels have increased dramatically and access to accurate real-time data has enabled Enviro Loo to act and resolve any issues as a matter of priority. Clear measurable data is furthermore available to clients confirming that Enviro Loo has met the agreed-upon service levels.

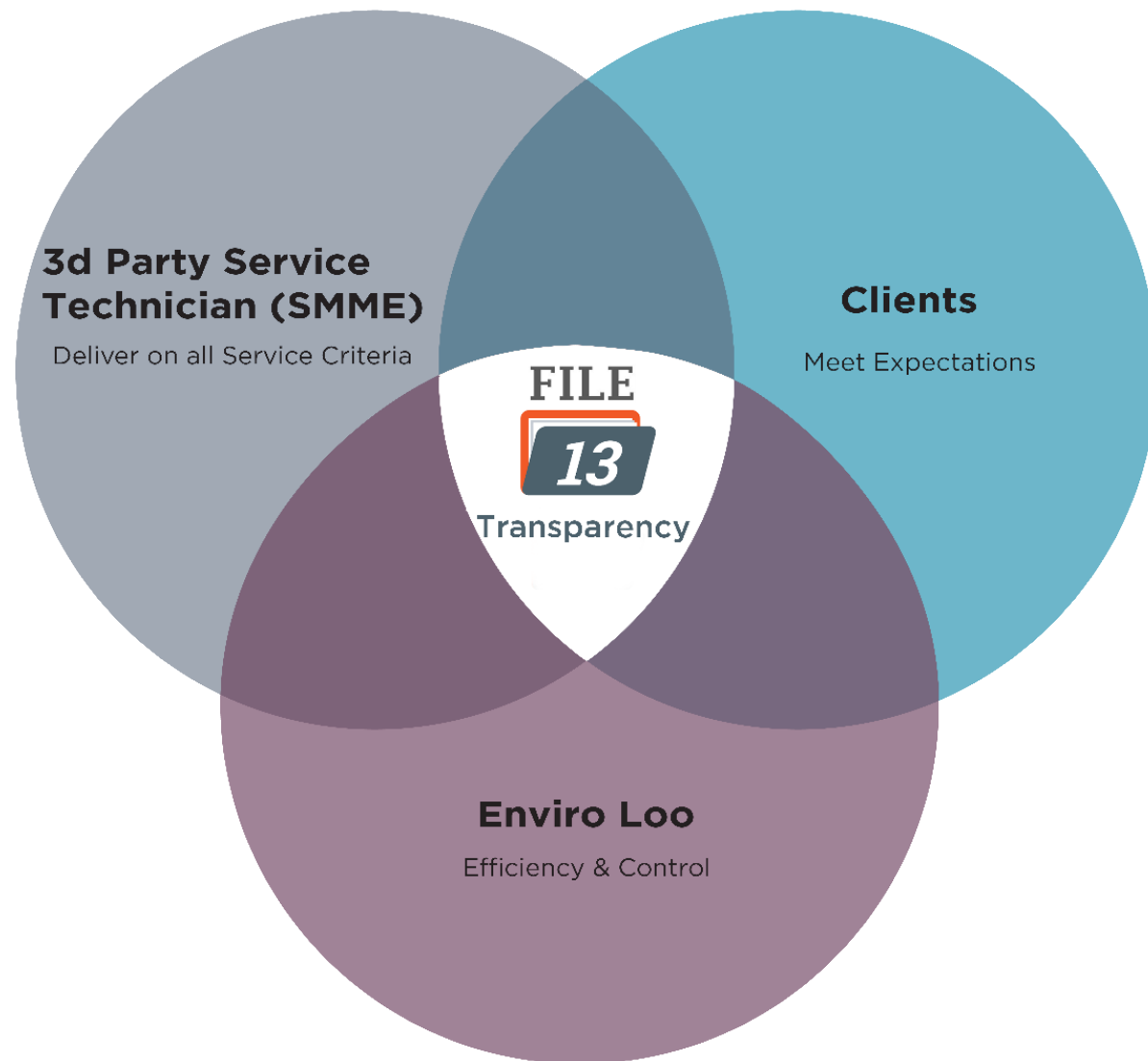
“Bloodhound’s business intelligence report templates have become an integral part of our business processes, so much so that the real-time data collected by FILE13 has become one of the top agenda items at management meetings. Overall, we have developed an excellent working relationship with the team at Bloodhound and they have maintained an exceptional level of support to date. We look forward to continue working with Bloodhound” , says Roland.



Enviro Loo currently contracts various SMMEs whose service teams maintain tens of thousands of waterless sanitation units across South Africa. As part of Enviro Loo's government service level agreement, service teams must physically visit each site every 3 months to complete a service and replace components as needed. Since introducing FILE13, this process is more effective, and services are rendered seamlessly. The collaboration between Enviro Loo and the SMMEs, which is a third-party government-mandated requirement, has been an absolute success.

**“Enviro Loo, together with our SMMEs and internal technicians have to monitor service levels, enhance user education and resolve issues arising at Enviro Loo units across all provinces in South Africa. Bloodhound’s FILE13 solution allows us to do so in real time, to gather reliable data and to provide accurate feedback that are crucial components of performance management” says Mark.**

## FILE13: The ideal mediator between all stakeholders to eliminate grey areas



## Supporting under-developed areas with water-saving sanitation solutions

Many areas in South Africa are severely affected by the scarcity of water. Sanitation is also an ongoing issue in Southern Africa. Contaminated groundwater is furthermore causing serious health issues, especially in under-developed areas. With this in mind, Enviro Loo created a water-saving sanitation solution that can save between 300 000 and 650 000 litres of water per year.

Enviro Loo's dry sanitation units have been installed in under-developed areas where sanitation solutions are desperately needed because water is scarce and/or groundwater is contaminated. Due to the challenging nature of the remote areas where these sanitation units are often installed, only a robust and easy to use system like FILE13 could fulfil all the requirements. One of the key features of the FILE13 app is its ability to sync all workflows to the device that allow for full off-line functionality in areas with weak or no GSM connectivity. Enviro Loo is also involved in provincial rural schools and housing programmes in Limpopo, Mpumalanga, the North-West and the Eastern Cape.



## The future of Enviro Loo and Bloodhound

Bloodhound is currently collaborating with installation inspection teams to integrate Enviro Loo's current site inspection and installation system with their backend. Since marking escalations as resolved is currently still indicated manually on reports, Bloodhound is also working towards further developing the exception escalation dashboard to include resolved escalations as part of the real-time data collected and used for reporting purposes. Bloodhound continuously works with Enviro Loo to uncover other possible processes where FILE13 could improve overall efficiency and quality of service.

**“Bloodhound’s solution has had a substantial impact on both our business efficiency and our growth strategy. In addition, FILE13 provided us with the most effective and accurate means of monitoring personnel and service levels” says Roland. “We will recommend Bloodhound without reservation,” he concludes.**





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