Compass BIO
By Compass Informatics

Biosolids Management System (BIO)

A configurable web platform that provides utility companies with an end-to-end solution for managing their nutrient-rich sludge or biosolids

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Information and Location Insights

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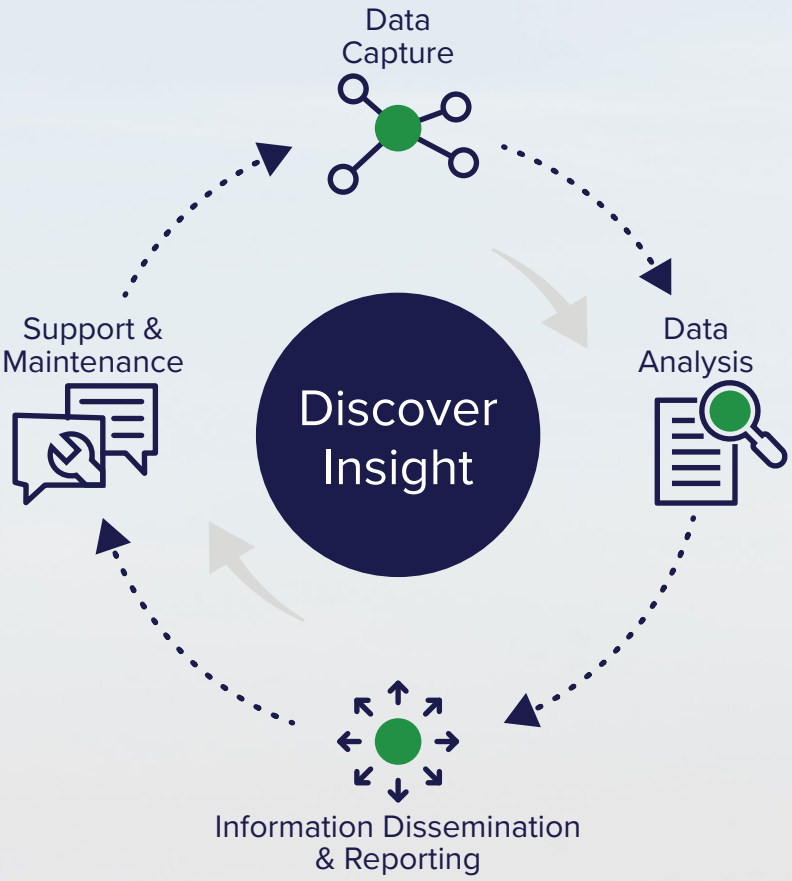

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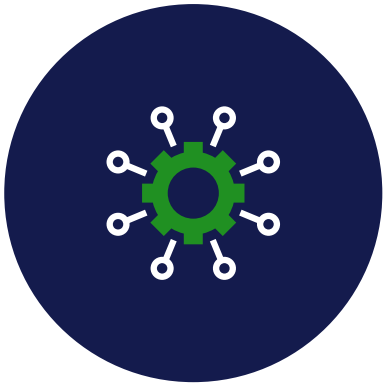


Biosolids are the residual material left over from sewage treatment processes and can be spread on land as a fertiliser for agriculture. BIO provides an end-to-end solution that helps you to control supply, delivery, spreading, sampling including field nutrient levels and customer and farm details.

Monitor

Compass Informatics has worked with several water authorities to develop a cloud-based tool (BIO) to replace legacy biosolids applications. It monitors the journey of biosolids from creation through to spreading on farmland. BIO uses GIS to assist generation and maintenance of accurate field data.

Compliance

BIO helps ensure that the movement and application of biosolids is compliant with UK & EU regulations, and adheres to the Biosolids Assurance Scheme standard.

Benefits of Compass BIO

Efficient End to End Workflow

Bio allows all processes to be completed and monitored from the single solution replacing the need for multiple platforms and time-consuming paperwork. Data is created and kept up to date in a single platform providing a clear overview.

Compliance and Audit

Bio's end to end solution allows utility companies to manage biosolids, samples, farms, fields, customers and deliveries. It's easy to use with most requirements managed at admin level.

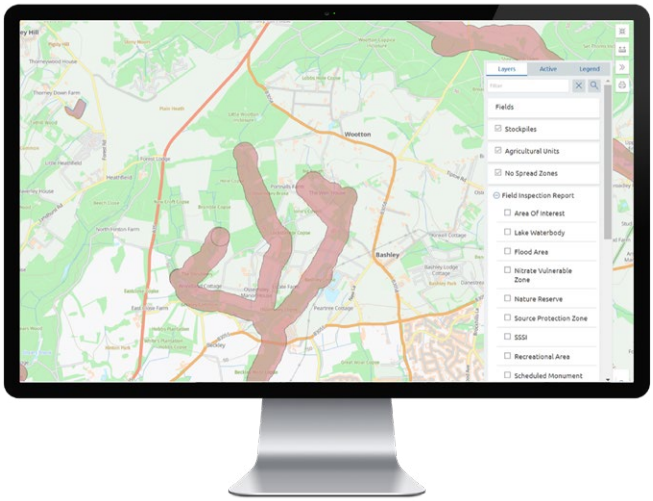
Integrated and Customisable

Bio can be set up according to your own preferences – hierarchy, soil samples, terminology, role specific configurations, including mobile and using your corporate terminology.

Key Features

GIS compatible

BIO has integration with GIS and can allow for customised maps and data sets to be used to support risk assessment, restrictions, treatment works, farms, fields, stockpiles and field inspection reports.



GIS

The GIS mapping contains layers that restrict access if the field is located in a potential risk zone, perhaps due to overhead cables, pipes, a risk of polluting water bodies, nature reserves and many others.

Supports multiple options for hosting including cloud

BIO is a COTS solution that can be deployed to your environment. Both on-prem and cloud options are supported.

BIO manages risk

Spreading biosolids presents many challenges and managing the risks associated with these challenges is a key part of BIO.

A Spreading Risk Assessment is generated when a Field Inspection Report is completed as part of the process prior to spreading and will include details of the environs around the field and any risks associated with spreading as a result.

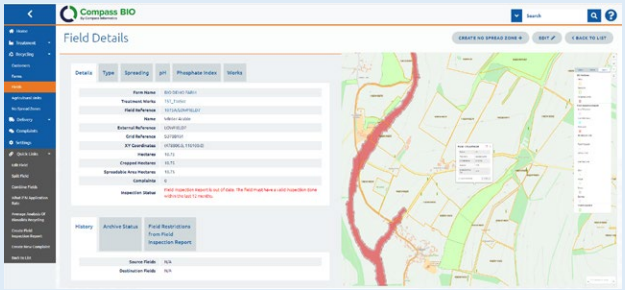
A Land Risk Assessment (LRA) notes areas of risk and restrictions within a specific farm or field. The LRA is included in the field restrictions, relevant to a specific delivery, as well as being recorded in the delivery instructions and included in the authorisation process.

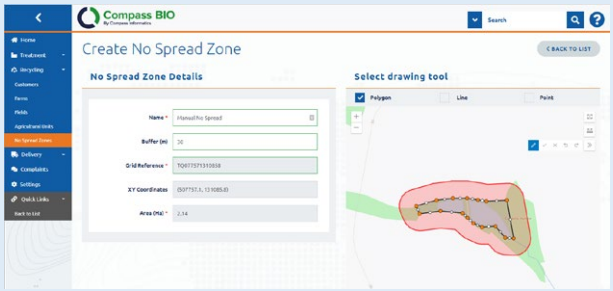
After each order, BIO produces a customer field letter for the farmer containing details of the nutrient and determinand levels that have been applied and that can be used to support farmers with their nutrient planning.

Stockpile Inspections allow users to add details of specific stockpiles and the checking and recording of the stockpile details.

Allows manual restrictions to be added to create no spread zones

No Spread Zones are defined areas that are recorded in the GIS module where biosolids cannot be applied. These can be manually created, or generated based on GIS datasets.

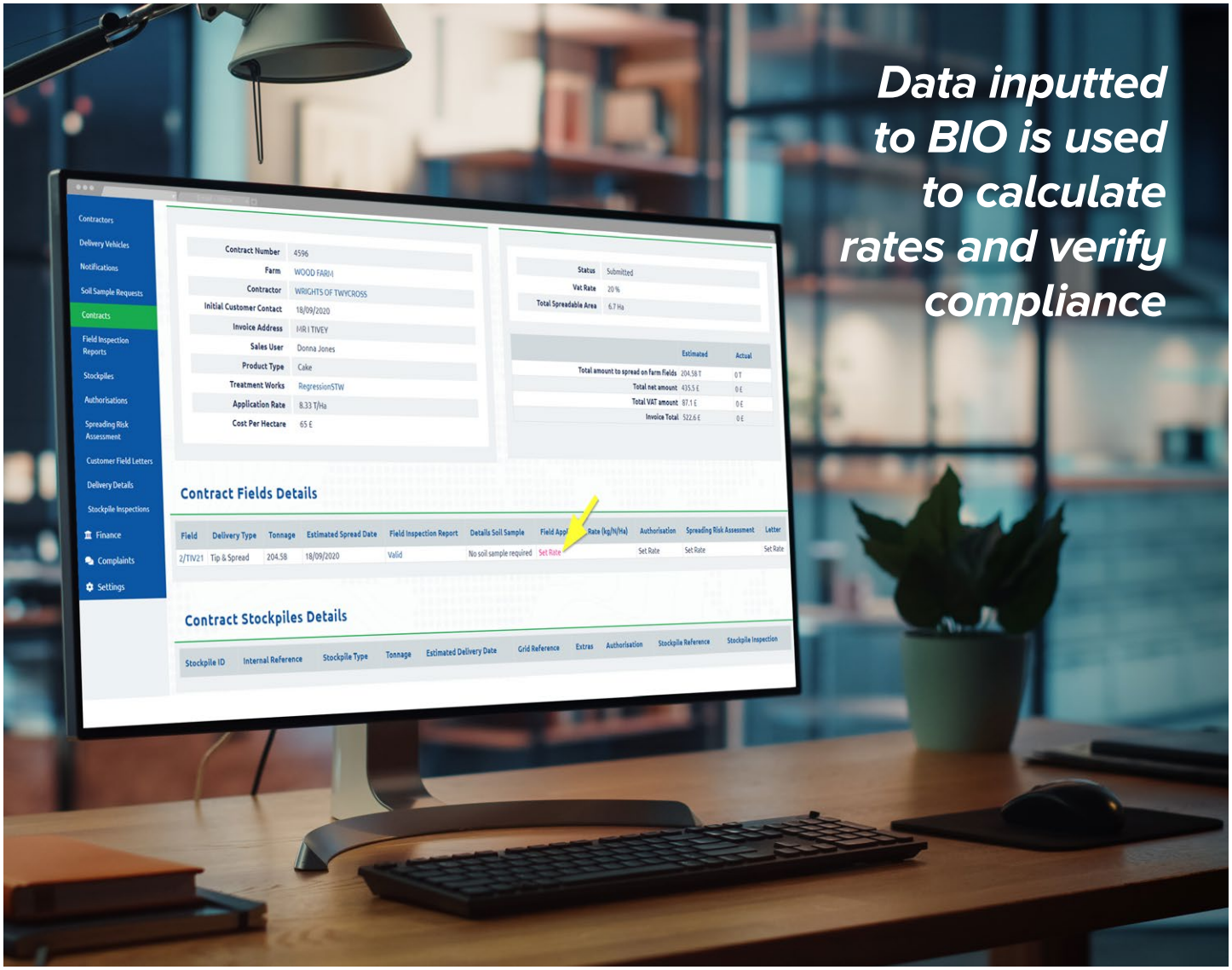




Manages your assets

BIO allows you to digitise your customer's fields and visualise them against background GIS layers

Key Features (continued)



Using BIO to ensure compliance

Ensures Compliance

BIO is used to ensure with BAS and Code of Practice compliance

- System calculations ensure sludge applications to land do not exceed mandated nutrient or metals limits.
- Configurable nutrient and PTE limits allow compliant biosolids deployments as legislation changes.
- Soil determinand limits are used to define the maximum values allowed in a single field
- Granular control of sampling requirements that are consistent with the regulations
- Calculates spread rates for a field based on a combination of soil and sludge samples
- Supports stockpiling of biosolids and assists with the generation of documentation required for S3 Exemption
- Creates a full audit trail and stores required authorisation documentation

Key Features (continued)

Managing customer contracts

BIO Contracts ensures clear traceability throughout the biosolids process. When setting up a customer contract details are added of farms and fields as well as stockpiles for “tip and spread” deliveries and Bio manages the verifications required for delivery and spreading. Users can also add external references, such as for billing software, to enable easy transfer of details between software products.

BIO will also host details of the contractor’s delivery vehicles including the district where the Delivery Vehicle is stationed, the delivery units used, the vehicle code, capacity, body and load, including the accumulative weight of the driver, passengers, accessories, fuel, tools and equipment.

Managing deliveries

All of the details required for a delivery are created by the user and generated by BIO to be sent with a delivery including:

- The Source of the Biosolids (Treatment Centre/ Stockpile)
- The Destination of the Biosolids (Field/Stockpile)
- The Type of Delivery (to Stockpile/to Field)
- Delivery Distance
- Delivery Estimates
- Amount Delivered to Date
- The Date of the Delivery Instruction creation and conclusion
- Restrictions and precautions for delivery (spread only)

While fully editable, BIO also prevents users from changing details that will impact the integrity of a delivery or spread, for example by preventing the user from editing a treatment works after a delivery is made.

Users can also edit, delete and search deliveries while BIO will apply the relevant calculations during the delivery creation process to validate that the delivery to the desired farm and/or field is permitted.

Users can also manage whether spreads are complete and, through the Billing Request process, make demand for, or record, payment.

BIO will also host details of the contractors delivery vehicles including:

- Contractor - This field will autocomplete with suggested entries previously created
- District - District where the Delivery Vehicle is stationed
- Delivery Unit Measure Type - Unit used to measure the amount of product delivered
- Vehicle Code - Reference used to identify the Delivery Vehicle throughout the system
- Vehicle Capacity - Refers to the maximum allowable weight that a vehicle can tow
- Vehicle Load - Refers to the weight of the driver, passengers, accessories, fuel, tools and equipment, and the vehicle body

User based permissions

BIO user access is fully customisable based on the level of access required for each user group

Sampling support

BIO supports sludge and soil sampling covering microbiology, metals and nutrients. Sample points in BIO, which can be associated with treatment works and with fields, are configurable and can also integrate with a number of lab providers.

Key Features (continued)

Supports in-field activities through mobile compatibility

BIO can also be used on mobile devices to support Field Operatives when creating risk assessments, field details or carrying out farm or contractor inspections. It also allows documents to be easily accessed and checked as well as providing all the delivery details.

Compass can work with you to configure offline capability that matches your needs and conforms to data and regulatory standards.

Integration

BIO supports numerous integrations to improve operational accuracy and timeliness, including lab systems for sampling, weighbridge data for biosolids movements, logger data for treatment works state. It also integrates with any available corporate GIS datasets.

> ***In the design & delivery of these services, the staff of Compass Informatics have displayed a high level of technical skill in & have engaged well with management in designing solutions that are fit for requirements.***

Compliance

BIO supports compliance by doing the heavy lifting for you, making it easy to verify determinand and nutrient levels, for example, and supporting the requirements set out by the UK's Environmental Agency regulations as well as the EU and BAS, by integrating a number of key validations such as:

- The Safe Sludge Matrix
- Biosolids Assurance Scheme (BAS)
- The Nitrate Regulations
- Nutrient Management Matrix

Email notifications are provided to alert users to potential issues, for example, relating to the digestion or microbiology processes

Alerts in BIO support a robust quality control process for the treatment of biosolids

Support

Choosing Compass Informatics and BIO means having a partner that is committed to supporting your business.

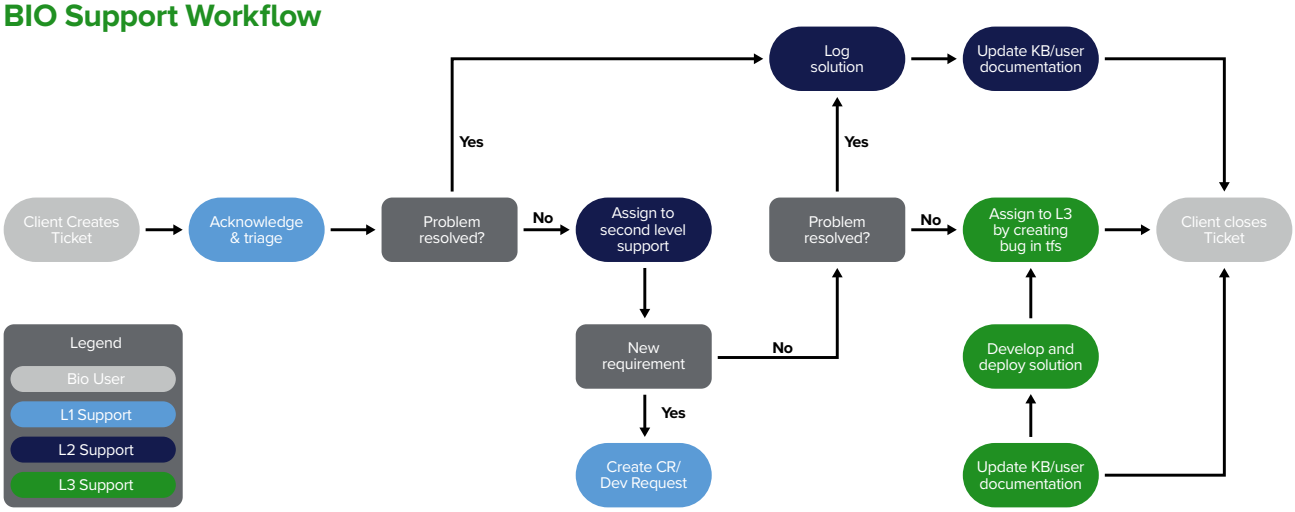
We have demonstrated a seamless introduction to BIO with several UK water companies and have experience of integrating BIO with your corporate GIS to allow you to leverage data.

With a proven and established process in place, our support team ensure any issues that might arise are resolved in a timely manner.

Regular meetings with our dedicated account manager and product owner ensure BIO continues to meet your needs through regular updates and, as a user of BIO, you will be invited to join other industry peers in our BIO User Group to share ideas and experiences relevant to biosolids and the water industry, as a whole.

Priority	Tracker	Definition	Response	Target SLA
P1	Critical	Critical state, system unavailable. The client is unable to operate.	1h	8h
P2	High	System degraded. Severe impact to functionality or performance. Some aspects of the business continue but it's a major problem.	4h	16h
P3	Normal	System degraded. Non-severe impact to functionality or performance. Business is unaffected but the problem is affecting how one or more people work.	16h	Fix or workaround. best effort unless agreed next release.
P4	Low	Fault not having significant effect on the system or fault is of a minor nature. E.g. Single user unable to work, cosmetic. There are cllear workarounds or alternatives.		Fix or workaround. best effort unless agreed next release.

BIO Support Workflow



TRACSIS

Who We Are

Compass Informatics is part of Tracsis Plc and, from our head office in Dublin, Ireland; our UK office in Leeds and UK network with Tracsis colleagues, Compass Informatics provides high quality, professional data services to the Irish, UK, South African and global markets.

Compass Informatics' location technologies and analytics solutions and services assist government and commercial organisations to deliver more efficient operations, protect their assets and meet regulatory requirements.

We combine the best of IT tools, Geographical Information Systems, data analytics and reporting and our core application areas include:

- Transportation asset management & modelling
- Urban, regional, socioeconomic planning
- Local and central government information systems
- Natural resources and environmental management
- Land and asset management
- Regulatory compliance across national laws and directives

Technical Specifications

Software requirements

Database server
- SQL Server 2016 Standard Edition or higher or SQL Azure
- Full-Text Search enabled

Application server
- .NET Framework 4.7.2 - http://go.microsoft.com/fwlink/?linkid=863265
- IIS
- Web Deploy - https://www.microsoft.com/en-us/download/details.aspx?id=43717

GIS server
- ESRI ArcGIS Server 10.7.1 or higher
- ESRI Web Adaptor 10.7.1 or higher

BIO is delivered as a single folder containing the following subfolders:

Applications - Contains pre-configured command line tools supporting BIO Web application. These applications will be installed via a PowerShell script.

Deployment scripts - Contains a set of PowerShell scripts to install BIO Web application, Documentation site and supporting tools.

Documentation - BIO Documentation website. It will be installed via a PowerShell script.

GIS - Map document and a Python-based installation script to set up map services.

Scripts - Database scripts to set up and configure BIO and BIO GIS databases.

WebApp - Packaged version of BIO Web application. It will be installed via a PowerShell script.

Recommended BIO configuration consists of three servers - a database server, a GIS server and an application server.

Integrations – JRP, LIMS, QUIS

GIS

Base maps for relevant errors (including areas delivered to outside of operational area) - The sources of data are Ordnance Survey Vector Map District data for small and mid-scales and Open Map Local for larger scales.

The currency of the data is;
- Vector Map District - 05/2021
- Open Map Local - 04/2021

The coverage of the map service is GB.
The map projection is British National Grid.

The service is appropriate for viewing down to a scale of approximately 1:2,500.

GIS server configuration

Deployment of BIO Map Services is done via Python scripts located in GIS folder. The scripts have some configuration keys but delivered scripts have been pre-configured for a specific environment if required information has been provided.

A prerequisite is that connection files to BIO database and to ArcGIS Server are placed in agreed location on GIS server so they can be used by the Python script.

Map layers support in BIO

- Area Of Interest (0)
- Lake Waterbody (1)
- Flood Area (2)
- Nitrate Vulnerable Zone (3)
- Nature Reserve (4)
- Source Protection Zone (5)
- SSSI (6)
- Recreational Area (7)
- Scheduled Monument (8)
- Public Footpath (9)
- Contour Line (10)
- Gas Pipeline (11)
- Overhead Line (12)
- River Waterbody (13)
- Ditch (14)
- Oil Pipeline (15)
- Water Pipeline (16)
- Groundwater Abstraction (17)
- House (18)
- School (19)
- Business (20)

Contact

We would love to hear from you

If you would like to discuss how Compass BIO can help support your organisation, please get in touch.

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