FENIX RAIL SYSTEMS

FENIX FIRST FIX

Depot Service Support

Agenda

01. First Visit
First Fix

02. Performance
Optimising Performance

03. Core Benifits
Operational Efficiency

04. Packages
Subscription Models

What is First Fix

Simplified, Efficient, and Cost-Effective Maintenance
- Improves reliability, accessibility, and maintainability
- Reduces downtime, saving valuable hours and cutting costs
- Supports PPM (Positive Preventative Maintenance)

How Does First Fix Performance Work?
We deliver regular performance reports (weekly or monthly) to identify equipment issues early. This enables proactive intervention through predictive maintenance. Routine site inspections are carried out by IRSE-qualified engineers with the goal of resolving issues during the first visit, improving system maintenance and spares management.

What Makes First Fix Efficient?
- One-Visit Resolution: Issues are identified in advance. Engineers arrive prepared to resolve them during their first visit, reducing the need for follow-ups.
- Transparent Reporting: Clients receive clear insights into system performance, helping reduce costs linked to spares and unplanned downtime.

What Does It Cost?
The service uses a fixed-fee structure with three tiered service levels tailored to your needs. Payment is taken via monthly direct debit, ensuring predictable costs.

Additional Information
- The First Fix advanced service is included as standard for 12 months on all new installations
- Upgrade to Elite available if required
- Compatible with all new and existing CBI systems

First Visit – First Fix

1 Engineer receives detailed reporting from Fenix Rail Depot Control Systems.

Gosforth
STATUS RED
19/08/2024 – 24/08/2024

Fenix RAIL SYSTEMS

W313→WestRec02		
EYYA ID	Time	Spare Parts
1600243	2024-08-26 06:59:03	TA relay, TA MC-module

Tools: screw driver, wrench, drill, hammer, utility knife

E52→Road 02		
EYYA ID	Time	Spare Parts
1087270	2024-08-29 09:12:44	TA relay, TA MC-module

Tools: screw driver, wrench, drill, hammer, utility knife

E52→Road 10 E		
EYYA ID	Time	Spare Parts
1068890	2024-08-31 21:05:10	TA relay, TA MC-module

Tools: screw driver, wrench, drill, hammer, utility knife

1

2 Engineer knows the section of track or server component that needs addressing.

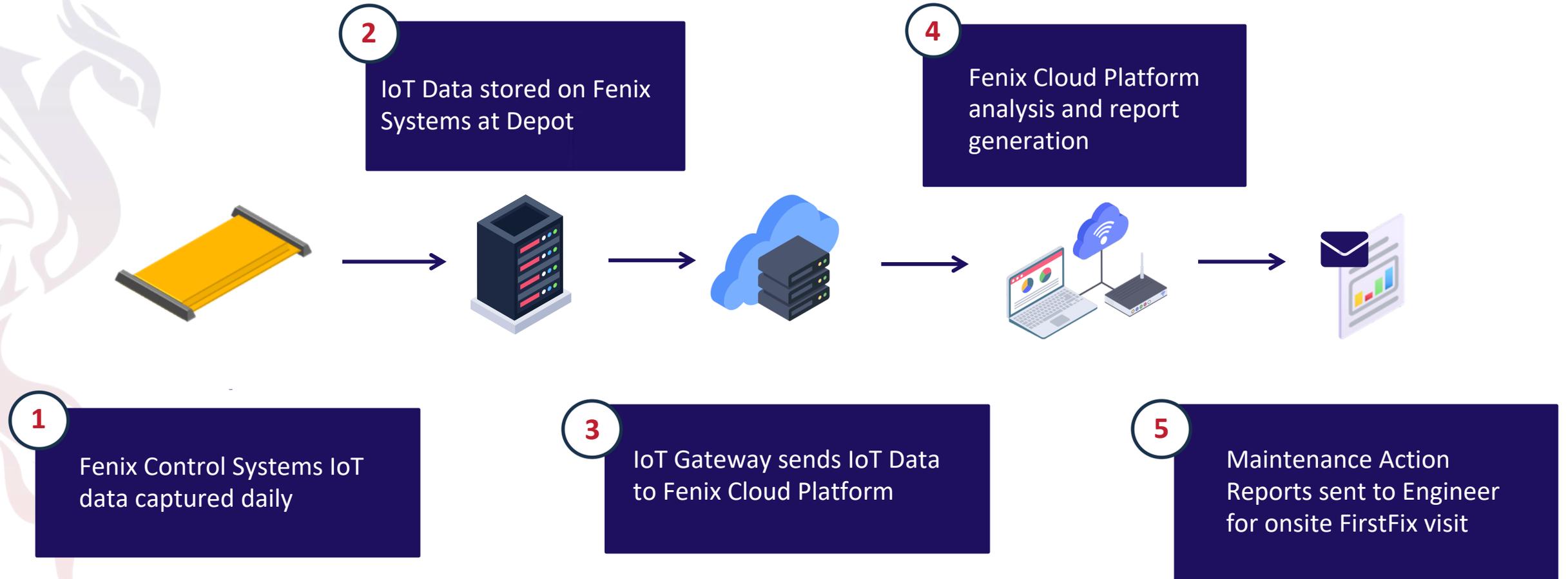**3** Engineer has correct parts and correct tools on hand.

4 Engineer has step by step instructions to diagnose and troubleshoot before resorting to spare part replacements.
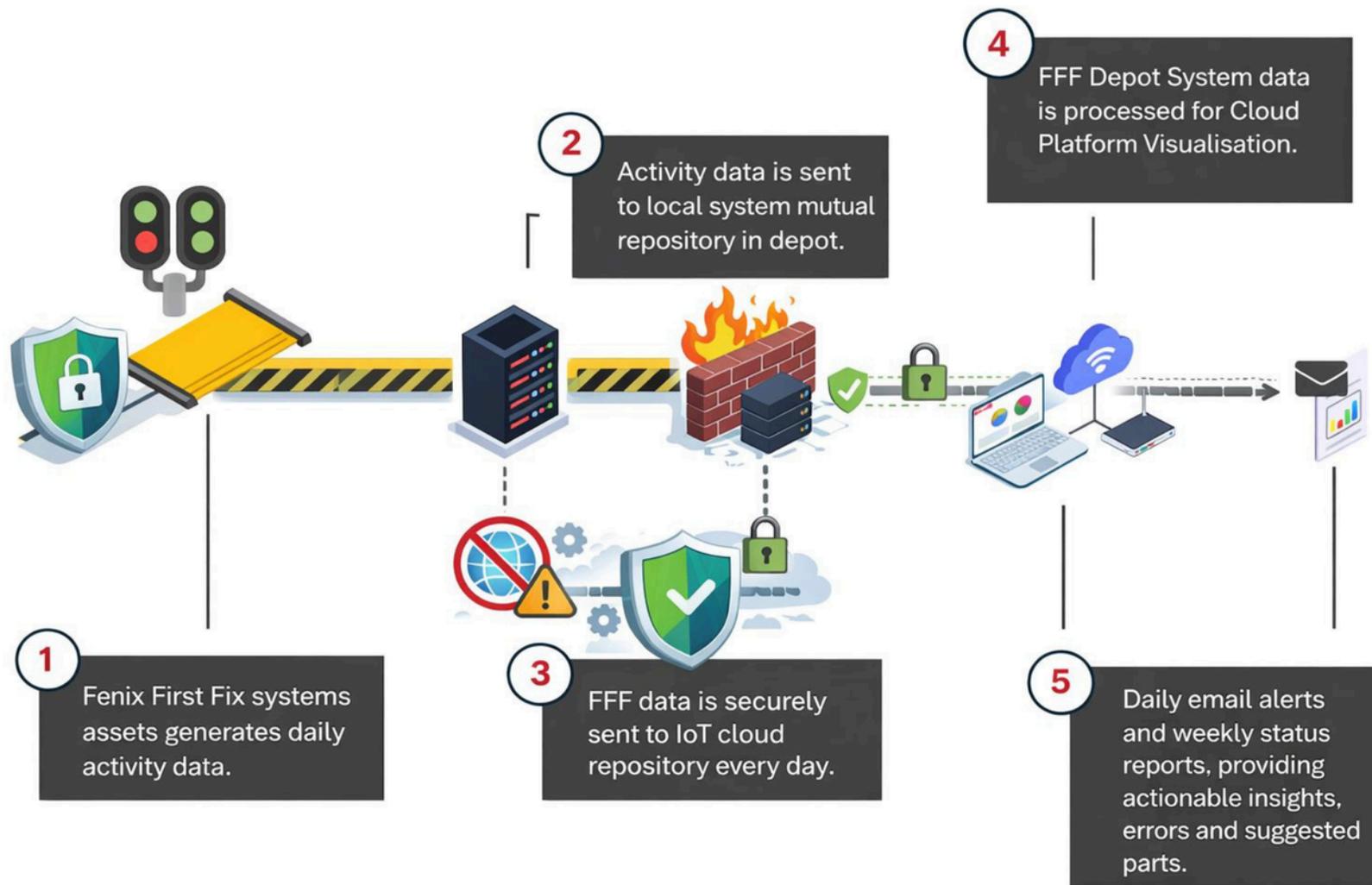
5 Engineer delivers a first visit first fix outcome.

Fenix First Fix Iot Service

2 IoT Data stored on Fenix Systems at Depot

4 Fenix Cloud Platform analysis and report generation

1 Fenix Control Systems IoT data captured daily

3 IoT Gateway sends IoT Data to Fenix Cloud Platform

5 Maintenance Action Reports sent to Engineer for onsite FirstFix visit

Secure Data Transfer Architecture

2 Activity data is sent to local system mutual repository in depot.

4 FFF Depot System data is processed for Cloud Platform Visualisation.

1 Fenix First Fix systems assets generates daily activity data.

3 FFF data is securely sent to IoT cloud repository every day.

5 Daily email alerts and weekly status reports, providing actionable insights, errors and suggested parts.

Secure Communications:

- Depot Control System(DCS) transfers logs to SD Card via one directional serial cable to Linux Box.
- Linux Box sits outside DCS and is securely accessed by Fenix First Fix Gateway.
- File is uploaded to Fenix First Fix AWS secure platform via TLS 1.2/TLS 1.3 (Transport Layer Security)
- All files and data are encrypted and stored with AES-256 encryption (Advanced Encryption Standard)

The Depot Control system is closed and has no internet access inbound or outbound.

Alert & Monitoring System Integration

High Alert email and Medium Alert email from Fenix Rail Systems.

System Alerts

Our Fenix Control System uses intelligent monitoring to detect faults across depot infrastructure. Alerts are classified by urgency:

- High Alert (Red): Indicates critical faults that require immediate attention to prevent service disruption.
- Example: MC-module failure at Points W0117 and E2224.
- Medium Alert (Amber): Signals that a recurring issue has been detected three times or more in 24 hours. These require maintenance within 72 hours to avoid escalation.
- Example: Manual point setting faults and PCB errors identified at Points E2224, W0117, and others.

These alerts are automatically sent to depot teams with direct action links and fault locations, supporting fast response and precise diagnosis.

Improve Performance

Provide full visibility on depot performance

Proactive depot issue management

Mitigate long lead times for spare parts

Demonstrating a gold standard for service within the industry

Preventive maintenance planning

Core Benefits

On same visit engineer will also address other issues

Reduce cost of maintenance

Ensure trains leave depot on time to avoid network delays

Reduce/Avoid unnecessary network rail fines

Improve customer satisfaction

Visibility of previously 'undetectable' track issues

Inventory of all depot management equipment

Improve knowledge of operators

Cost Saving Benifits

1. **Reduced reactive maintenance:** Reduced number of reactive maintenance call outs gives reduced annual maintenance cost.

2. **Reduced downtime:** Less system failures eliminates / reduces operational down time and associated management effort and staffing.

3. **Enhanced safety:** Less system failures eliminates / reduces operational down time and reduces the likelihood of a safety incident occurring whilst in degraded mode working.

4. **Reduced reactive maintenance:** Reactive maintenance callouts are resolved more quickly and reduces operational downtime, saving / reducing TOC / FOC train delay penalty fines.

5. **Reduced overall maintenance costs:** Optimisation of maintenance spares, less wastage gives reduced annual cost.

6. **Improved budget planning:** Annual maintenance costs are known in advance, reduced risk of going overbudget and having to transfer budgets from elsewhere.

7. **Improved asset reliability:** System failures will be less significant, reducing the operational and cost impact.

8. **Increased lifespan of assets:** Regular inspections, services, and repairs are scheduled in advance to maintain the condition of the system and equipment, thereby extending the lifespan of the assets.

9. **Improved productivity:** Reduced downtime and improved asset reliability contribute to increased productivity.

10. **Improved asset performance:** Regular targeted maintenance ensures that assets are performing at their optimal level.

Packages

Essential
Subscription

Daily Monitoring Proactive Maintinence Monitoring Annual Engineer visits and reports

Advanced
Subscription

Weekly Depot Reports Access to Fenix Platform Monthly Engineer visit Checklist 'RAG' report
12 Month Contract

Elite
Subscription

Advanced + Complete Fenix Maintinence Package, including 4-hour response time Operator Support Dedicated Account Manager

Gosforth
DATE RANGE: 2025-05-05 - 2025-05-11

Route Status	4	1	4
	● Red	● Amber	● Purple

Gosforth
STATUS RED
DATE RANGE: 2025-05-05 - 2025-05-11

ROUTE : E26->EastRec		
EYYA ID	Date	Location
6649060	2025-05-06 07:59:54	Point E2224
6661276	2025-05-07 07:54:39	Point E2224
6661553	2025-05-07 08:05:57	Point E2224
6675891	2025-05-08 06:35:13	Point E2224
6690209	2025-05-09 07:11:36	Point E2224

Gosforth
STATUS AMBER
DATE RANGE: 2025-05-05 - 2025-05-11

ROUTE : W307->WestRec02		
EYYA ID	Date	Location
6705023	2025-05-10 05:32:51	Point W0117, Point W1317, Point W1417
6705452	2025-05-10 05:56:40	Point W1317

Gosforth
STATUS PURPLE
DATE RANGE: 2025-05-05 - 2025-05-11

ROUTE : E52->Road 05		
EYYA ID	Date	Location
6683493	2025-05-08 23:26:18	Point E0901, Point E2224

ROUTE : W313->WestRec02		
EYYA ID	Date	Location
6660551	2025-05-07 07:18:49	Point W0117

Weekly Depot Report

Subscribers to our Advanced and Elite packages receive a Weekly Depot Report, summarising fault trends, alert frequency, and affected point locations. This allows depot teams to:

- Spot recurring issues
- Prioritise maintenance work
- Reduce downtime and potential fines

The example shown includes multiple alerts at Point E2224, supporting proactive resolution before service impact.

Engineers Alerts

Reset axle counter

Cause of Failure:
Only trained and certified staff are permitted to carry out maintenance on this system!
Outdoor works and checks always have to be done by 2 maintainers!

▸ Miscounts during train movements

▸ Indoors related PCB failure

① ② ③

Action Steps

▸ Download Axle Counting Data for analysis; have an empty (clean, no files, no folders, FAT 32 formated) USB Stick.
Plug in at NET01 Board front side Mini-USB slot, use an OTG cable USB-A female to USB-Mini-plug cable
Identify which train movement has caused a miscount or did this happen suddenly wwithout train movement.

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▾ In case of DWS replacement, Line blockage required for safe working!

Tools Required

▸ TTM (Training – Tools – Manual)

▸ Socket 19 mm, extended length (50 mm depth)

Thank You

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