



Intelligent Depot Protection System

**The World's First DPS with Integrated
Facial Recognition Technology!**



**50 YEARS OF
RAIL EXPERTISE**



**AN UNRIVALLED
SAFETY RECORD**



**100% FOCUSED ON
THE RAIL INDUSTRY**

www.emeg.co.uk



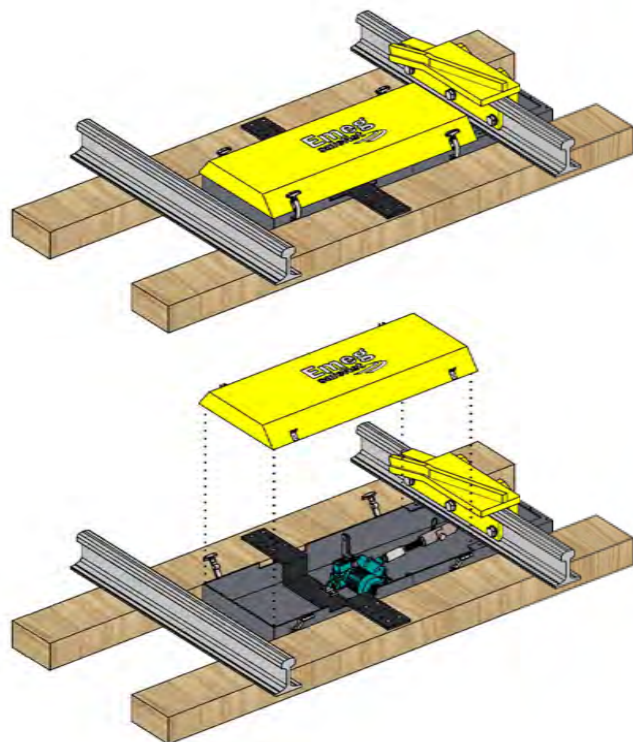
Intelligent Depot Protection System

Introducing the Emeg safeNet™

Uniquely, Emeg's safeNet™ Depot Protection System can be configured to operate exactly in accordance with specific and unique depot operating procedures and practices, provided always that the resulting system is a safe, SIL2-compliant solution.

Emeg's safeNet™ Depot Protection System incorporates features such as bespoke software programming, automatic powered derailleurs / wheelstops, intelligent PLC controllers (ROLOs) with or without HMIs, a PC Head End (optional), individual data keys, train detection, visual and audible warning systems and a robust, reliable control network.

One advantage of Emeg's safeNet™ Depot Protection System is that each system is designed, manufactured, installed and can be maintained by Emeg's own internal staff; no other system can offer these services and ongoing support.



**PADSnet
APPROVED**



**WORKFORCE
SAFETY**



**INTERFACE
OPTIONS**



**REMOTE
MONITORING**

Features & Benefits

- ✦ Safety of the personnel from the train in operation.
- ✦ Ensures rail vehicle movements are controlled with no risk to staff.
- ✦ Flexible, user-friendly intelligent network distribution system, protecting your depot.
- ✦ safeNet™ can be tailored to suit existing depot procedures.
- ✦ Interface with existing depot systems.
- ✦ Remote monitoring and integrated facial recognition.
- ✦ Complete turnkey solution.
- ✦ Network Rail PADS-approved automatic derailer assembly.

The safeNet™ control panel is easy to operate and is equipped with the main PC and a Human Machine Interface (HMI) screen.

The HMI is touchscreen operated and provides interactive views of the system in real time (see opposite).

The views opposite are just typical sample views. The actual HMI screens will be developed during design to accurately reflect the DPS at the depot.

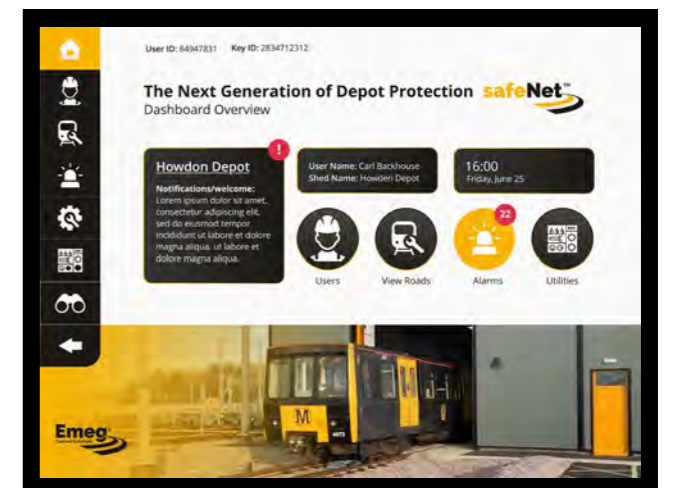
The first three screens can be accessed by enabling the status of each road and the names of the actual operatives that are logged onto a road at any one time.

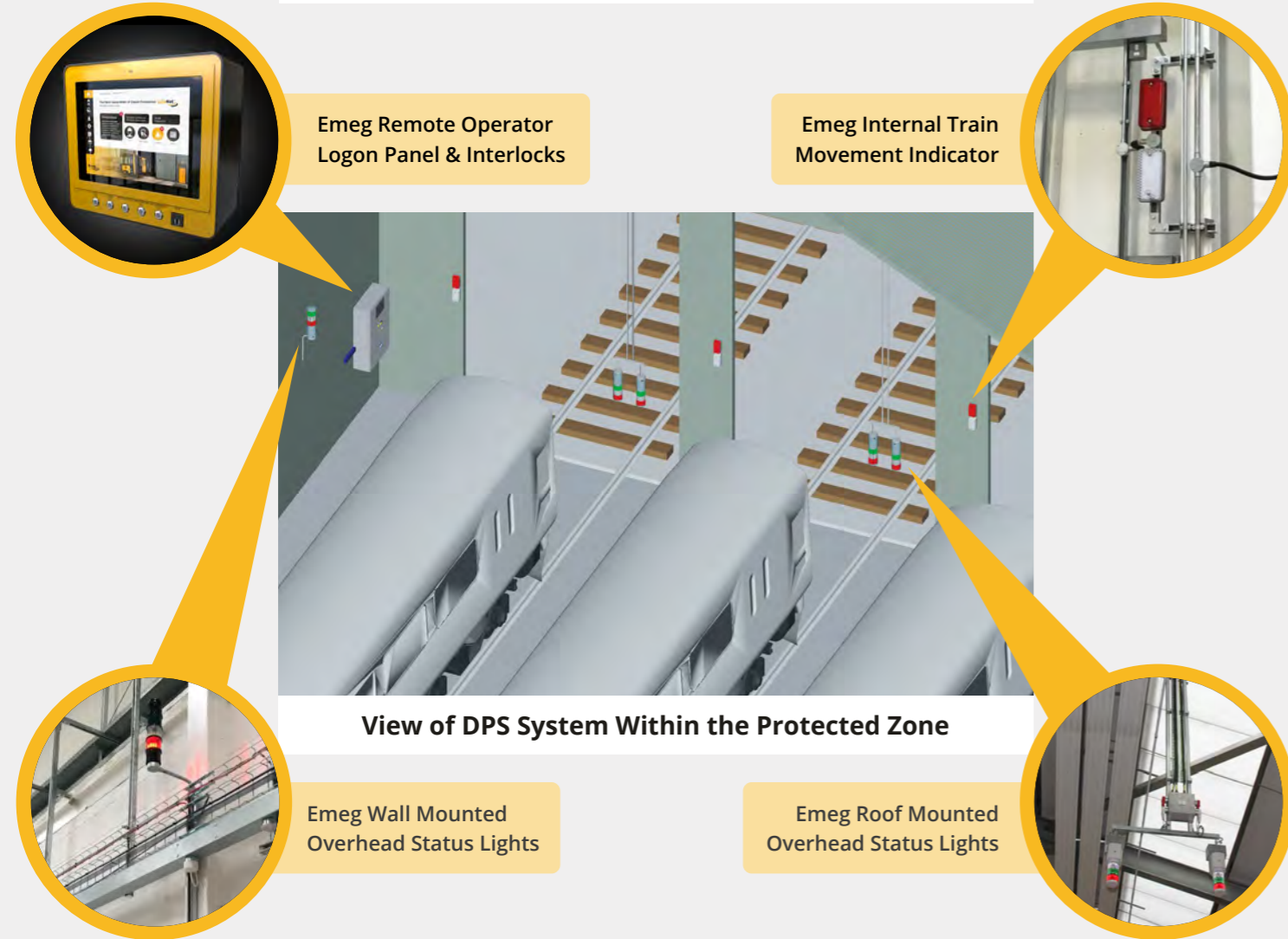
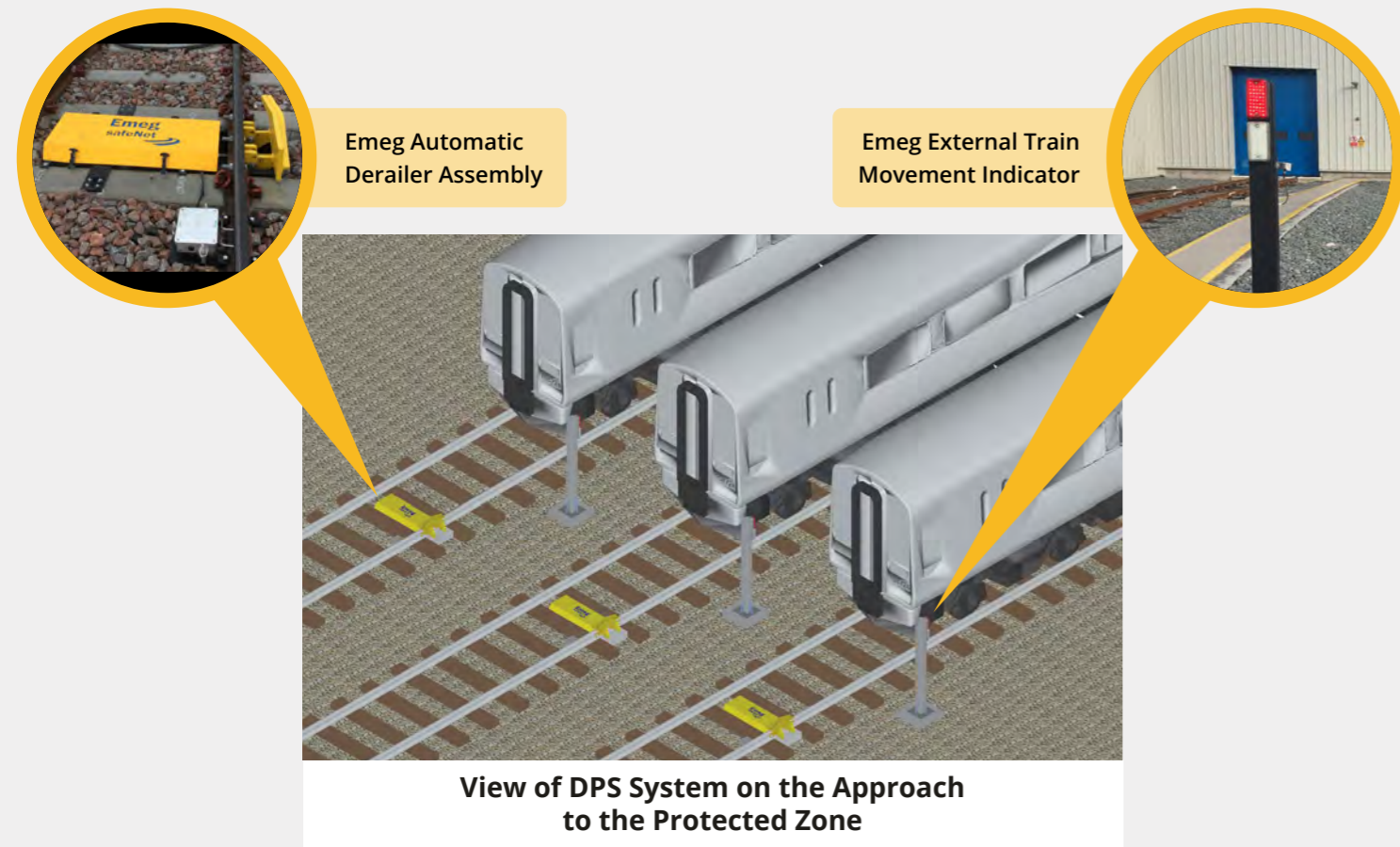
The Emeg safeNet™ Depot Protection System is based around a system of 'Data Keys' to allow personnel at the depot to work safely on a specific road within the depot shed or siding.

The 'Data Keys' are unique to each person authorised for their use and are encoded with data pertinent to its owner. Although the data keys provided at completion will be encoded with the relevant personnel data, it will be possible for a designated person to programme/encode additional keys at the specific DPS panel. The keys are also colour-coded for each level of use.

The data keys are programmed to one of five access levels:

- ✦ Level 1 - Contractor
- ✦ Level 2 - Depot Cleaner
- ✦ Level 3 - Depot Operative
- ✦ Level 4 - Depot Supervisor
- ✦ Level 5 - Depot Manager





View of DPS System on the Approach to the Protected Zone

View of DPS System Within the Protected Zone

History of Emeg's Involvement with Depot Protection Systems

Up to the early 1990s, all rail work in the UK was designed in-house by British Rail, although Emeg's engineers were seconded to British Rail Board in the 1980s to assist with a complete overhaul of the design for Depot Protection Systems. In fact, some of the drawings referenced in the current UK Network Rail Depot Protection Standard were produced for British Rail Board by Emeg's engineers.

Since British Rail (which ultimately became Network Rail) ceased all design activities, Emeg's in-house engineering and manufacturing team has designed, manufactured, installed, commissioned and maintained all their Depot Protection Systems. An essential resource, we're responsible for the provision and support of all aspects of Network Rail's Depot Protection Systems. Maintaining high quality standards, impeccable service delivery and rapid response via in-house capability is unique to Emeg.

During the installation of a next-gen Depot Protection System for Network Rail's Leeds Neville Hill Depot in 2019, Emeg's engineers discovered an interface problem with the automatic derailleurs that could be traced back to the original British Rail DPS design from the early 1990s. Unfortunately, Lifeguards, which are installed on all rolling stock, had not been considered when the automatic derailleurs were originally designed so lifeguards could potentially defeat the automatic derailleurs with disastrous consequences.

Network Rail asked Emeg to undertake studies and to provide a solution that would be adopted throughout all UK Depot Protection Systems. Emeg produced a revised automatic derailer design that was comprehensively tested with rolling stock lifeguards to ensure it was fully fit-for-purpose. Our derailer system is coordinated with rolling stock lifeguards in such a way that it becomes impossible for a lifeguard to defeat the derailer. As a result, Emeg's revised automatic derailer received PADS Approval and is the only automatic derailer that has Network Rail approval.

Below is a schedule of some of the Depot Protection Systems that Emeg has provided over the years:

- 1980 – Norwich Crown Point**
Provide Depot Protection System for the entire, newly built Norwich Crown Point rail depot. This was the very first Depot Protection System.
- 1988 – Leeds Neville Hill**
Provide Depot Protection System for Leeds Neville Hill rail depot.
- 1988 – Heaton**
Provide Depot Protection System for Heaton rail depot.
- 1989 – Wembley**
Provide Depot Protection System for Wembley rail depot.
- 1990 – Willesden**
Provide Depot Protection System for Willesden rail depot.
- 1990 – Bletchley**
Provide Depot Protection System for Bletchley rail depot.
- 1990 – Bounds Green**
Provide Depot Protection System for Bounds Green rail depot.
- 1990 – Oxley**
Provide Depot Protection System for Oxley rail depot.
- 1991 – Toton**
Provide Depot Protection System for Toton rail depot.
- 1991 – Wimbledon**
Provide Depot Protection System for Wimbledon rail depot.
- 1991 – Plymouth**
Provide Depot Protection System for Plymouth rail depot.
- 1991 – Edge Hill**
Provide Depot Protection System for Edge Hill rail depot.
- 1991 – Old Oak Common**
Provide Depot Protection System for Old Oak Common rail depot.





Intelligent Depot Protection System

1991 – East Ham

Provide Depot Protection System for East Ham rail depot.

1993 – Buxton

Provide Depot Protection System for Buxton rail depot.

1993 – Selhurst

Provide Depot Protection System for Selhurst rail depot.

1993 – Thornaby

Provide Depot Protection System for Thornaby rail depot.

1994 – Didcot

Provide Depot Protection System for Didcot rail depot.

1993 – Immingham

Provide Depot Protection System for Immingham rail depot.

1995 – Manchester

Provide Depot Protection System and interlocking for Manchester International rail depot.

1996 – Heathrow Express

Provide Depot Protection System for Heathrow Express rail depot.

2001 – East Ham

Provide Depot Protection System for East Ham rail depot.

2002 – Selhurst

Provide Depot Protection System for the Wheel Lathe Building at Selhurst rail depot.

2002 – Peterborough

Provide Depot Protection System manual derailer system for Peterborough rail depot.

2002 – Aylesbury

Provide Depot Protection System for the extension of the Aylesbury rail depot.

2003 – Barton Hill

Provide Depot Protection System for Bristol Barton Hill rail depot.

2003 – North Pole

Provide Depot Protection System for the heavy maintenance workshop at North Pole International rail depot.

2003 – Brighton

Provide Depot Protection System for Brighton rail depot.

2004 – Old Oak Common

Provide Depot Protection System for Old Oak Common rail depot.

2007 – Bounds Green

Provide Depot Protection System alterations for Bounds Green rail depot.

2007 – Oxley

Provide Depot Protection System automatic derailer system replacement for Oxley rail depot.

2008 – Hornsey

Provide Depot Protection System for the Wheel Lathe Building at Hornsey depot.

2009 – Oxley

Provide Depot Protection System alterations for Oxley rail depot.

2010 – Wembley

Provide Depot Protection System alterations for Wembley rail depot.

2011 – Hornsey

Provide Depot Protection System alteration for the Wheel Lathe Building at the Hornsey depot.

2011 – Slade Green

Provide Depot Protection System upgrade for Slade Green rail depot.

2012 – Heaton

Provide Depot Protection System for Heaton rail depot.

2012 – Oxley

Provide Depot Protection System alterations for Oxley rail depot.

2013 – Midland Metro

Provide Depot Protection System for Midland Metro rail depot.

2014 – Selhurst

Provide Depot Protection System extension for Selhurst rail depot.

2014 – Neville Hill

Provide Depot Protection System for new Reception Sidings at Neville Hill rail depot.

2014 – Hornsey

Provide Depot Protection System further alteration for the Wheel Lathe Building.

2014 – Norwich Crown Point

Provide Depot Protection System design services for Norwich Crown Point rail depot.

2014 – East Ham

Provide Depot Protection System design services for East Ham rail depot.

2015 – Allerton

Provide Depot Protection System for Allerton rail depot.

2015 – Neville Hill

Provide Depot Protection System for Neville Hill rail depot.

2015 – Penzance

Provide Depot Protection System design services for Penzance rail depot.

2016 – Derby V-Shop

Provide Depot Protection System for new V-Shop Crossrail Rolling Stock Assembly Factory at Derby.

2016 – Clapham Junction

Provide Depot Protection System for Clapham Junction rail depot.

2017 – Midland Metro

Provide Depot Protection System alterations for Midland Metro rail depot.

2018 – Neville Hill

Provide Depot Protection System alterations for the Reception Sidings at Neville Hill rail depot.

2019 – Kirkdale

Provide Depot Protection System for Kirkdale rail depot.

2019 – Wigan

Provide Depot Protection System for Wigan rail depot.

2020 – Neville Hill

Provide Depot Protection System further alterations for the Reception Sidings at Neville Hill rail depot.

2020 – Howdon

Provide Depot Protection System for Howdon rail depot.

2021 – Neville Hill

Provide Depot Protection System upgrade to DMU Building at Neville Hill rail depot.

2022 – Qurayyat, Saudi Arabia

Provide DPS with integrated facial recognition for Al-Qurayyat – Saudi Arabia Railways (SAR).



Intelligent Depot Protection System

Pioneering Innovative Depot Protection Systems for 40+ Years