

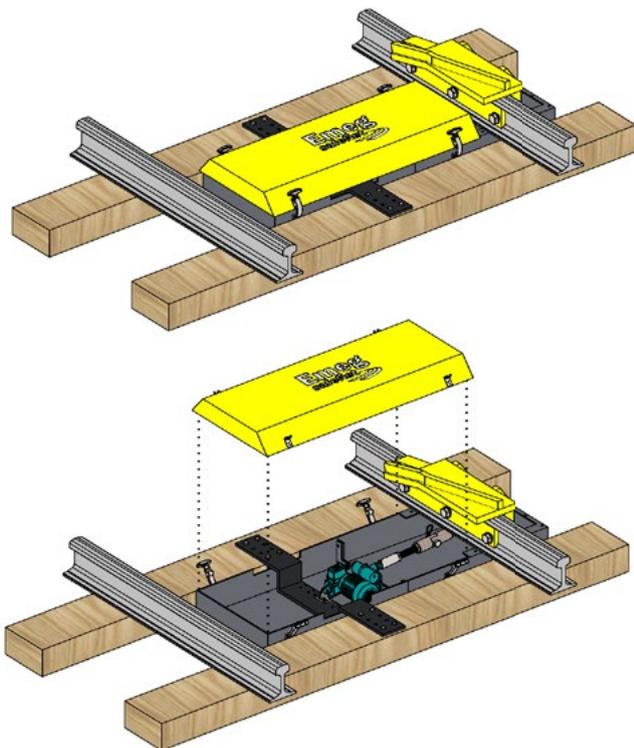
Intelligent Depot Protection System

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 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.



depot CONNECT



**PADSnet®
APPROVED**



**WORKFORCE
SAFETY**



**INTERFACE
OPTIONS**



**REMOTE
MONITORING**

Features & Benefits

- ✦ Creates a safe depot environment for train maintenance.
- ✦ 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.
- ✦ Complete turnkey solution.
- ✦ Network Rail PADs Approved Emeg equipment.

Head office

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Intelligent Depot Protection System

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.

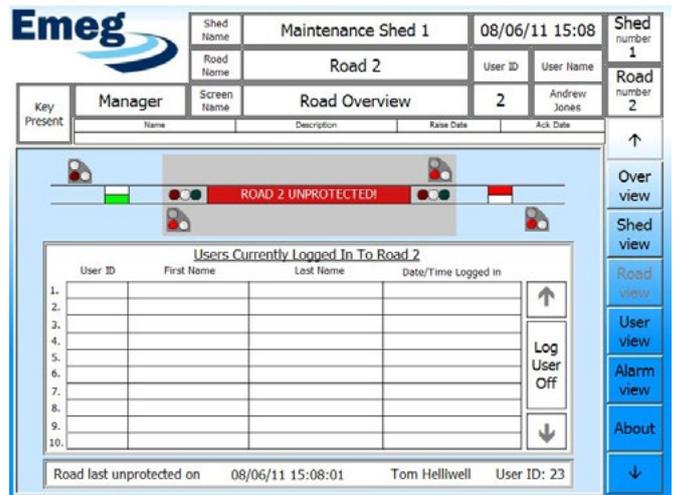
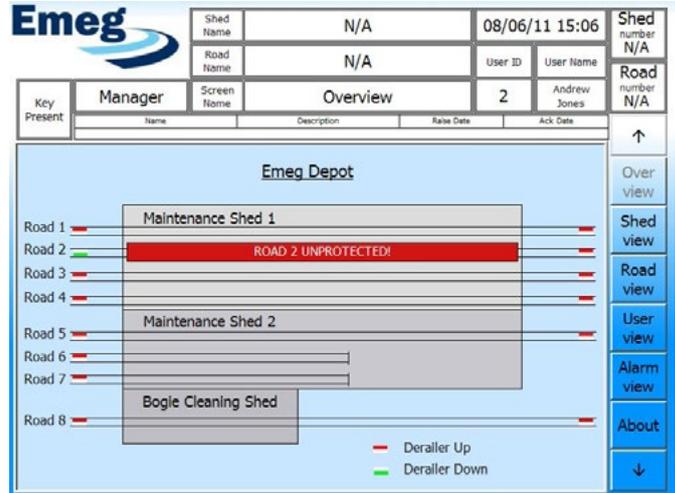
The first three screens can be accessed by enabling the status of each road and the names of the actual operatives that are logged onto a road at any one time.

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:

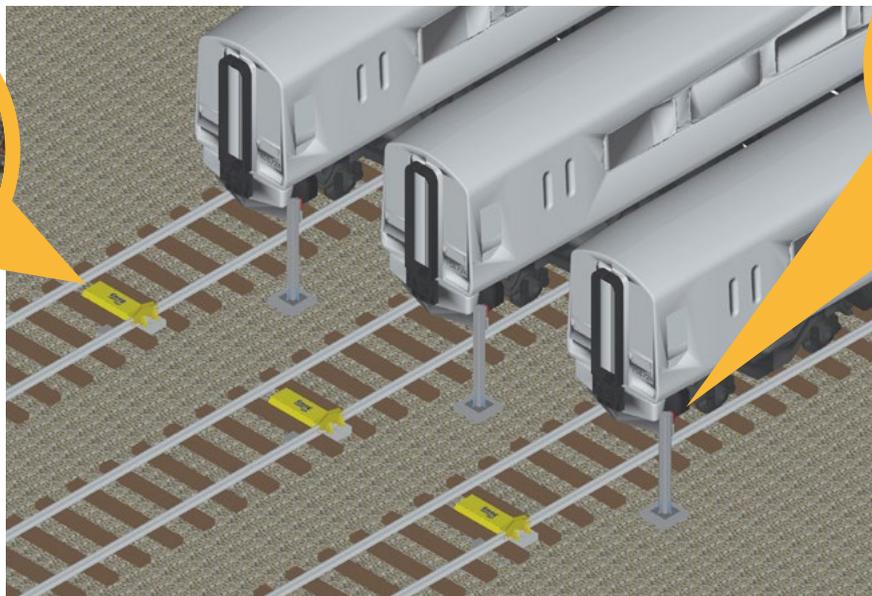
- Level 1 - Contractor
- Level 2 - Depot Cleaner
- Level 3 - Depot Operative
- Level 4 - Depot Supervisor
- Level 5 - Depot Manager



Intelligent Depot Protection System



Emeg Automatic Derailer Assembly



View of DPS System on the Approach to the Protected Zone



Emeg External Train Movement Indicator



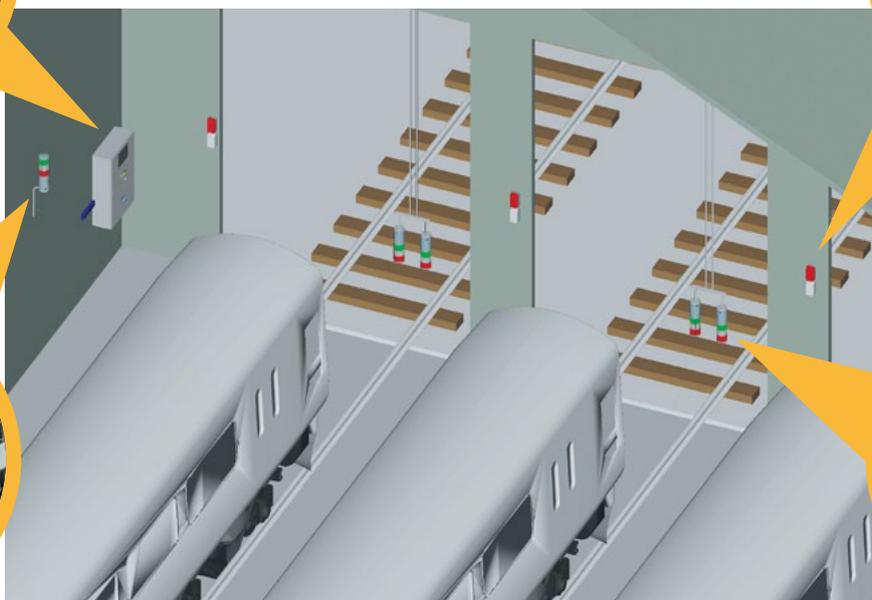
Emeg Remote Operator Logon Panel & Interlocks



Emeg Internal Train Movement Indicator



Emeg Wall Mounted Overhead Status lights



View of DPS System Within the Protected Zone



Emeg Roof Mounted Overhead Status Lights

Intelligent Depot Protection System

Product Summary

Emeg's **safeNet™** Depot Protection System (DPS) is a system designed to keep people safe within the designated 'protected' zone from unauthorised train movements – into and out of the zone – and safe from harm from other possible elements within the protected zone, such as the OLE etc. The 'protected' zone can be a road or roads within a workshop, or can be designated sidings or other areas within rail depots.

User Protection

Given the above, Emeg's **safeNet™** Depot Protection System (DPS) is a safety critical system in the operation of the depot. The principles of the DPS operation require that any user, such as the following list, would have to log on to the DPS as a mandatory requirement of working within each 'protected' zone within the depot:

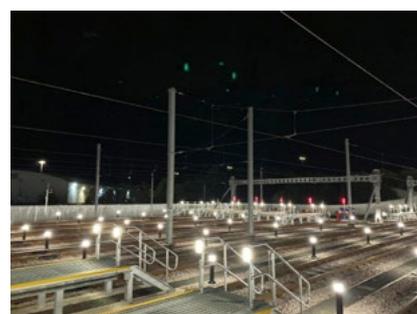
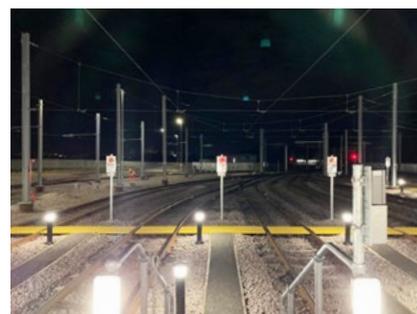
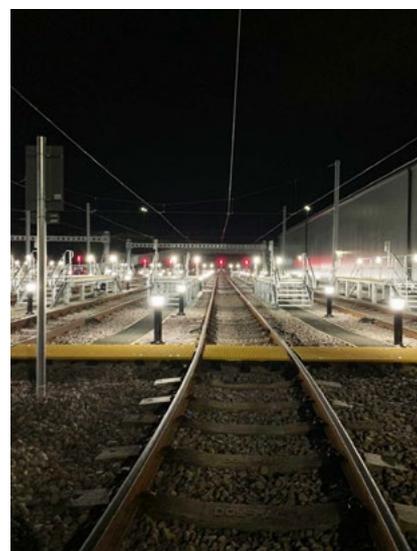
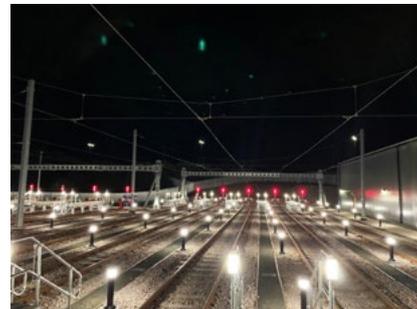
- ✦ A member of the regular depot staff
- ✦ A visitor to the depot
- ✦ A contractor who is working for the depot

Failsafe Controls

A user wishing to work on a road that is protected by the DPS would log onto the Remote Operator Log On (ROLO) panel associated with that road by way of a User Key. The User Key is a unique physical key which is programmable for the access limitations of an individual user. Whilst a user is logged on to the system, the road on which the user is logged cannot be unprotected and rolling stock cannot enter or leave the protected road itself. When all users are logged off a specific road, the depot's designated person (usually the Team Leader) can then unprotect this specific road, which will enable the Team Leader to initiate any required train movement into or out of said road.

Audio & Visual Alerts

To enable a safe movement, in or out, to take place on a specific road the DPS is equipped with a number of road specific audio and visual warning systems, interfaces, motion sensors and derailleurs. When an authorised train movement is selected, the derailer will be lowered to enable the authorised train movement. As the train passes the derailer it will hit the trackswitch which will initiate the train movement sirens. The sirens can be set to various tones and noise levels at the depot's request. Once the movement has taken place, it is normal practice to protect the road once more. Before this is allowed by the system, it will check the PIR at the relevant derailer is clear to ensure the train has passed the derailer before raising it.



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