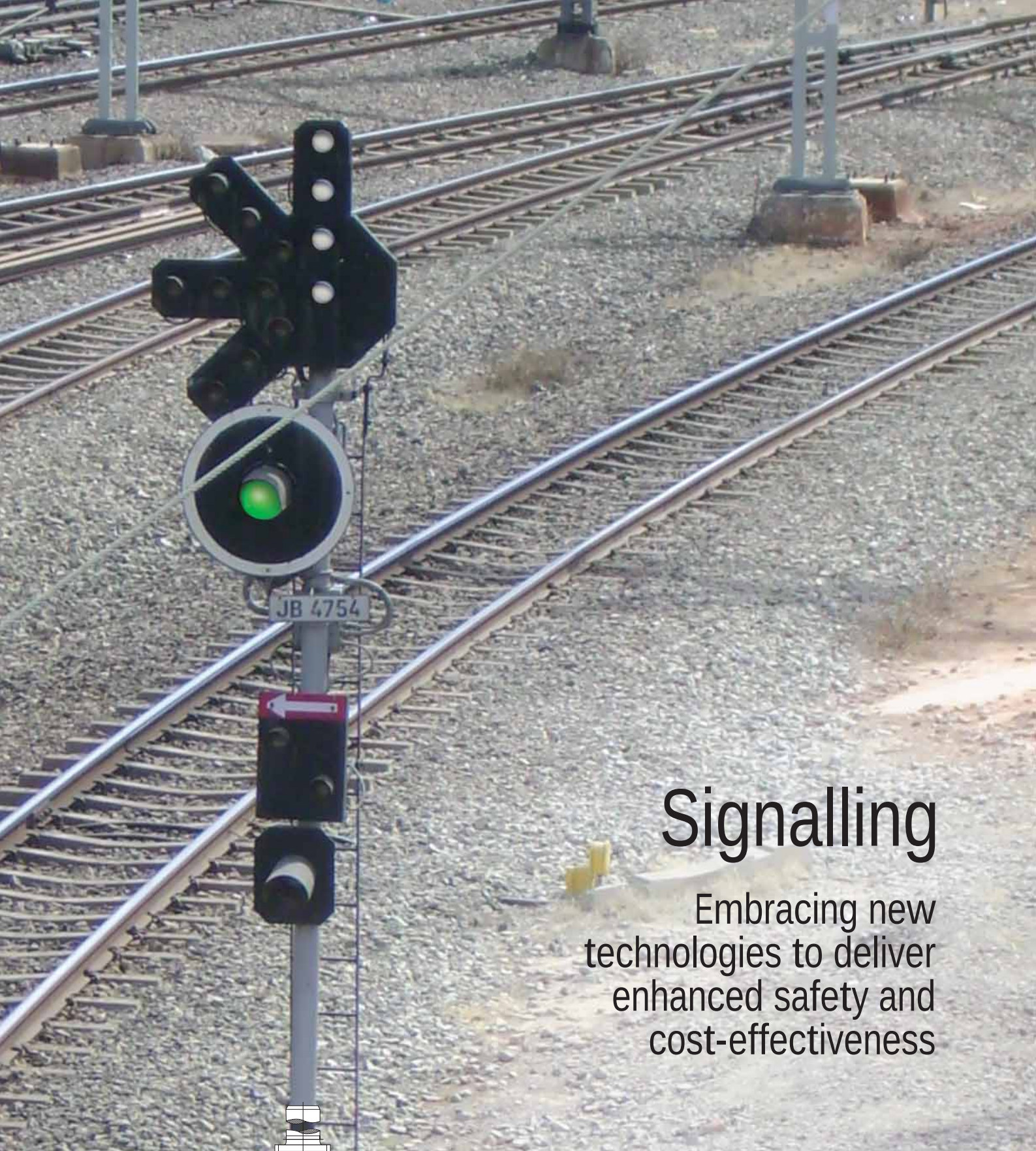
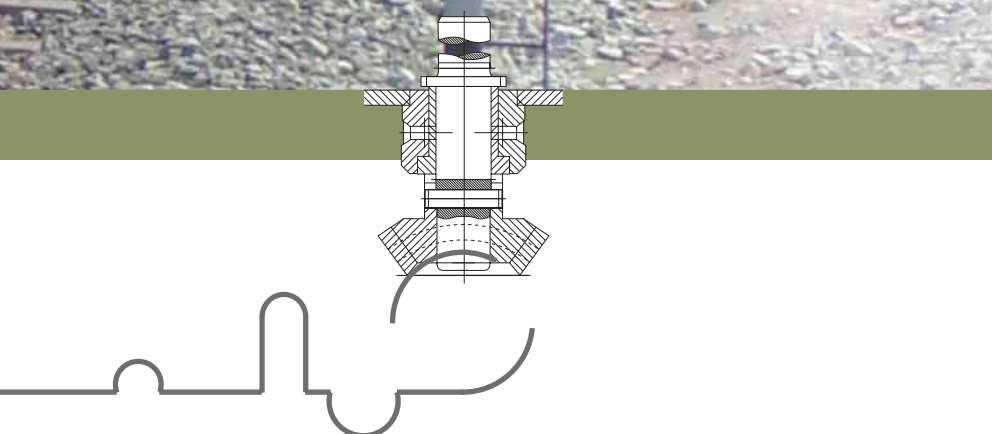




Signalling

Embracing new technologies to deliver enhanced safety and cost-effectiveness



RAIL PARADIGM

The rail environment

As a safe, cost-efficient and environmentally friendly mode of transport, rail infrastructure is emerging as a key area of public and private sector investment across Africa.

At the same time, governments are under pressure to upgrade antiquated or obsolete rail infrastructures and signalling technologies in order to meet growing demand for compliance with higher safety levels and increasing capacity.

Signalling is a highly specialised discipline. Only the best skill-sets and latest technologies are good enough to ensure safety and facilitate greater cost-efficiencies.

The problem for African infrastructure owners and internationally based developers, however, is finding a local partner who has the world-class skills and resources to plan and execute cutting-edge signalling solutions.

Solutions

Supported by our civil, structural, electrical and electronic engineers, and endorsed by our Rail Operator Accreditation (B Listing for the Passenger Rail Agency and Transnet Freight Rail), we provide comprehensive turnkey signalling solutions to railway operators and rail asset owners:

- Feasibility studies
- Concept designs
- Safety validation
- Detail designs
- Installations
- Commissioning
- Testing
- Certification

Capabilities

Our vast and specialised professional rail experience, together with our dynamic approach to problem solving, position us as the African leader in providing innovative turnkey signalling solutions. We have the human resources to offer wide ranging capabilities.

- Consulting engineering for turnkey feasibility studies, conceptual and detail designs focused on signalling but also applicable to other engineering disciplines
- Planning, design and installation of all types of interlocking systems as well as wayside and communication equipment

- Testing and commissioning of all types of signalling and related systems
- Certification of signalling safety systems
- Maintenance of signalling systems
- Rail Safety Regulator investigation, including wrong-side failures
- Signalling asset management, planning, condition monitoring and implementation
- Providing maintenance on signalling equipment
- Training in signalling systems

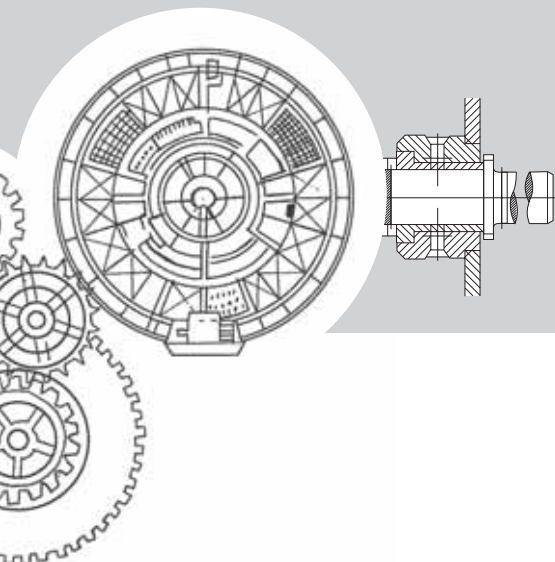


Services

Our professional ECSA, IRSE and CIDB-accredited* engineers have the ability to integrate old and new technologies to provide working solutions and installations.

In conjunction with this we ensure minimal disruption to normal train services using our thorough knowledge of train operation and time-slot management.

* Engineering Council of South Africa,
Institute of Railway Signal Engineers
and the Construction Industry
Development Board



Our extensive experience in the signalling environment enables us to provide accredited safe and cost-effective signalling, including maintenance services.

Interlocking

Mechanical
Power Frame (electrical miniature lever frame)
Saxby Farmer lever frame
Colour Light
NFG (free-wired relay interlocking)
Spoorplan Mk1
SSI (Westinghouse)
Spoorplan MK 1B
Spoorplan MK 1C
Spoorplan MK M
Spoorplan MK 2
Spoorplan MK T
HR92
HR97 with DECS
HRS
SIMIS S
Radio Control
Yard Automation

Remote Control

Westinghouse F3
Westinghouse RC S1
Westinghouse RC S2
Profibus
Siemens PLC
CS90

Train Detection

Siemens Axle counters
AC Tracks
Jeumont Track Circuits
ML TI 21 Track Circuits
Reed Track Circuits
Aster Track Circuits

Signals

GRS, SGE and WBS Search Light
3 Aspect
Multi Aspect
LED

Points

GRS
Westinghouse Switch-Matic
Westinghouse E63
Telkor
Integra
C1H
Ebiswitch
Siemens DSG9
Hydra

Power Equipment

Battery Chargers
Inverters
UPS and Batteries
Power Change-over Panels

Peripherals

Signal assembly and wiring
Gibbons Train Number System
PLC Train Number System
S2PLC/VME System
Data Logging
S2 VDU
CS90 VDU
ATR, ATP, ATS
Spoorplan unit refurbishment
Apparatus case assembly and wiring
Lightning Protection (study, design, install)
Stray Currents (investigation and solutions)
Ultra Sonic Rail Break Detectors
OFC

Capacity

- Five ECSA/IRSE local signal engineers
- Four local signal project managers
- Five local signal technicians
- One local software engineer
- Four international signal designers (Europe)
- Two international signal project managers (Europe)
- Two international software developers
- Two professional electrical and electronic engineers
- One civil and structural engineer
- Two CAD designers
- One quantity surveyor
- Two logistics and materials managers
- Two quality and safety officers
- Five administrative support personnel
- Supporting mechanical civil plant and equipment

Partner with African leaders

Rail Paradigm is a specialist engineering firm that blends local experience with global expertise. Our strategic alliances on the continent and around the world enable us to design, execute and maintain wide-ranging projects in line with world-class standards. And we do so in ways that promote the greater socioeconomic development of the communities we touch.

For more information on how we can help you engineer the future, visit our website at www.rail-paradigm.com

