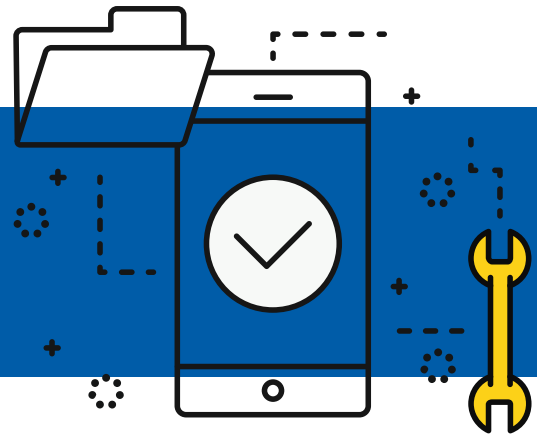# TRANSFORM EXPERIENCE.
TRANSFORM BUSINESS.

Connected Field Service &
Asset Management solution

TYPICAL CHALLENGES

Maintenance of large infrastructure sets such as roads and water networks require large operational and capital expenditure budgets. Globally, government agencies are faced with large inefficiencies and lack visibility to manage the maintenance operations and the expenditure associated to with this.

This lack of visibility is a result of manual processes and no link to geospatial information which makes it impossible for management to make strategic decisions, such as replacement vs refurbishment, type of investment etc.

The need to deliver "more with less" has put pressure on operational and capital expenditure budgets. At the same time, the expectation of the digitally empowered citizen is rising.

Government agencies are forced to increase the life of the expensive infrastructure items, which is achieved by shifting the organisation from a reactive to planned maintenance organisation.

In South Africa, the Auditor General requires government agencies to comply with standard business processes and publish auditable expenditure reports. With the current systems and processes in place, many agencies struggle with compliance.

Employees expect that business processes and systems are optimised and make use of latest sets of technology. The use of mobile device technology and applications to simplify capturing of data and events is a common requirement by staff.
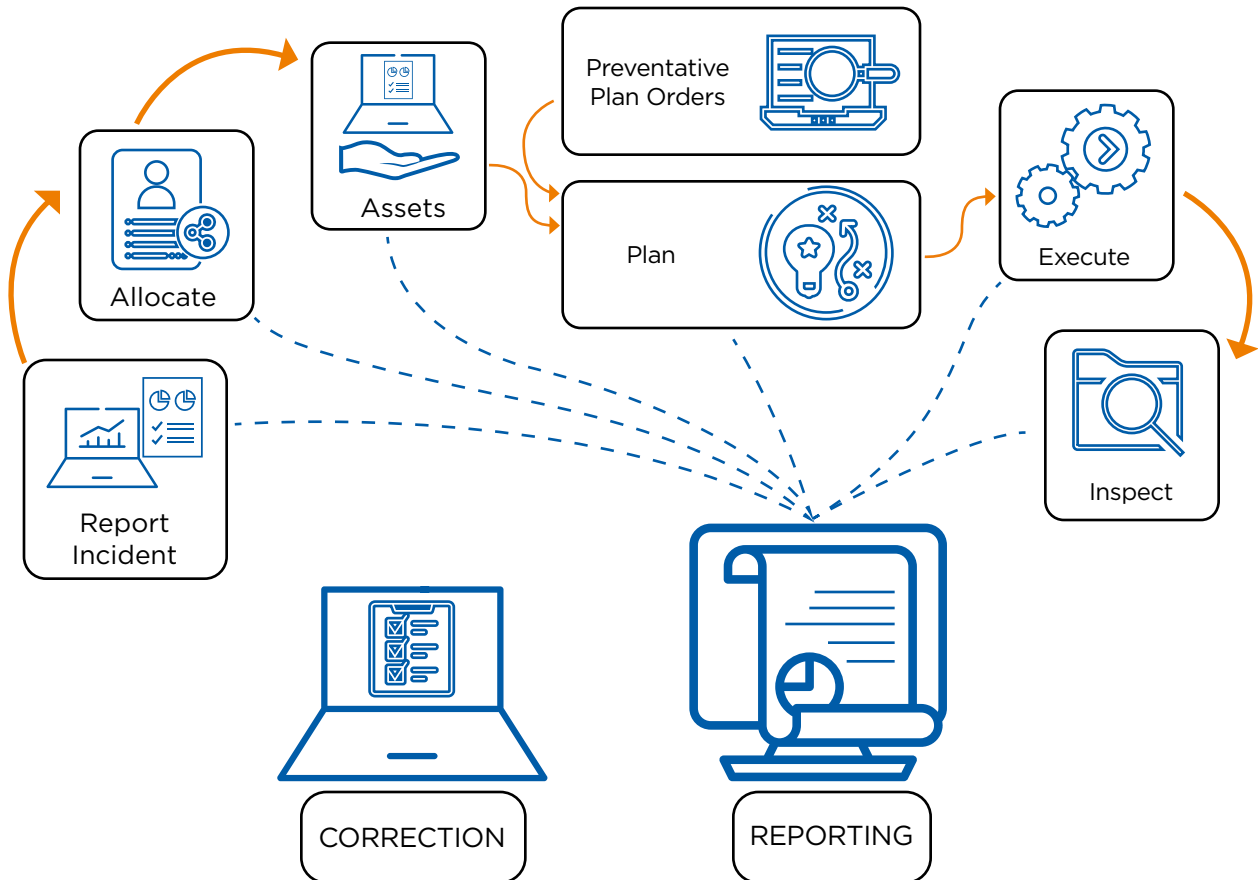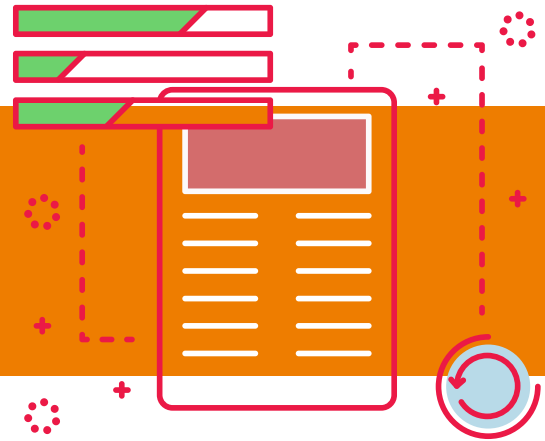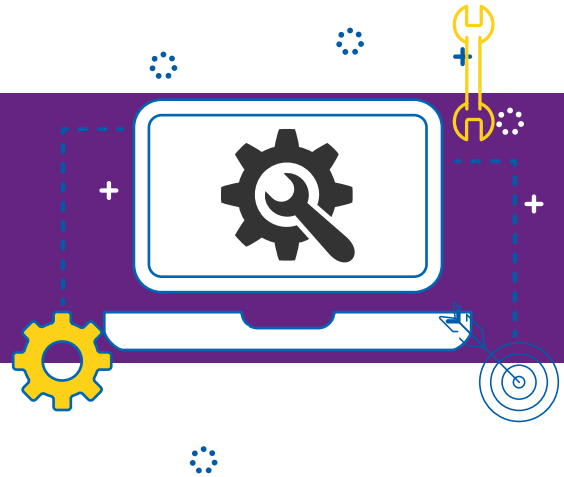
SOLUTION OFFERED

The solution enables organisations to conduct maintenance of their infrastructure and assets (e.g. roads, pipelines) with the following key features:

- Solution provides the full value chain for work management (spatially enabled) covering:
  - Failure identification
  - Assessment
  - Allocation and planning
  - Execution
  - Inspection
  - Subsequent preventive maintenance

- The solution focuses on extending the life of an asset through preventive maintenance best practices (e.g. life expectancy the road from 25 to 50 years by the introduction of crack seal treatment and chip and slurry seals)
- Comprehensive grouping, classification and asset failure analysis taxonomy based on best engineering practices
- Mobile application solution provided to end users will replace all paper-based capturing. (Assessors, Team Leaders and Inspectors)
- Best practice user experience mobile application provides users with guided input screens – both offline and online
- The solution includes a strong integration of the spatial asset information residing in GIS to ERP.
- Costing of labour, travel, material, services etc. on asset level enabled.
- The solution embarks is based on a comprehensive set of Level 5 business processes aligned to ISO 55000.

WORK PROCESS

Allocate

Assets

Preventative Plan Orders

Plan

Execute

Inspect

Report Incident

CORRECTION

REPORTING

SYSTEM FUNCTIONALITY

Operational and Strategic KPI driven business activities using SAP Fiori Launchpad with a unique link into SAP BW on HANA and S4/HANA:

- ▼ GIS maps embedded in Functional Location, Notification and Maintenance order (SAP Plant Maintenance) transactions ensuring accurate identification of the asset to be maintained
- ▼ The link between SAP Plant Maintenance and SAP Finance Asset Accounting to allow corporate finance and auditors to view asset locations on GIS maps
- ▼ Comprehensive grouping, classification and asset failure analysis taxonomy based on best engineering practices
- ▼ SAP Fiori Mobile Applications for field workers and management to manage assessment, execution / perform maintenance and inspection processes with picture and voice notes capability end users (Assessors, Team Leaders and Inspectors)
- ▼ In field operational reporting with SAP Fiori Launchpad with real-time S4/HANA data
- ▼ SAP Afaria with Mobile Secure on mobile devices to manage software updates, file downloads and device security
- ▼ Authentication, offline capability, trust certificates, different corporate policies and load balancing through SAP Mobile Platform
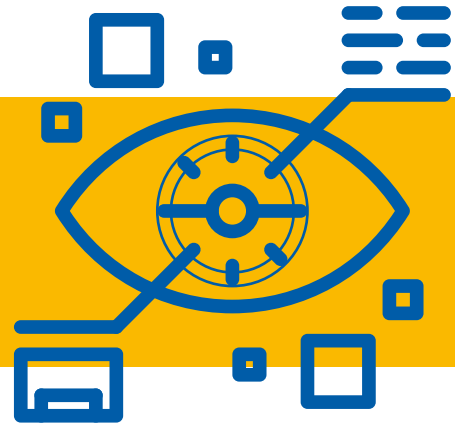- ▼ SAP Netweaver Gateway using OData as integration platform

BENEFITS

Functional Benefits

▶ Preventative maintenance: Increased useful life of assets within infrastructure set

▶ Strategic decision making: Visibility of all work orders operationally, spatially and financially, supporting future planning initiatives with accurate historic data and trend analysis

▶ Compliance: Meeting compliance requirements of internal and external audits

▶ Operational excellence: Ability to deliver "more with less"

▶ Data: Improved data quality over time.

Organisational Benefits

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▶ Data: Improved data quality over time.

FUTURE

▶ **Machine Learning:** Storm Water pipes video recording analysis can be improved by identifying trends around conduit cracks, misalignment and debris

▶ **Machine Learning**: Road condition surveys can be expedited from 7 months for a 30,000km road network to weekly condition monitoring by placing cameras and depth meters under refuse removal vehicles which cover 85% of road network during weekly pickup routes.
Results can be analysed to identify major faults such as potholes, delamination, crocodile and transvers cracks etc.

▶ **Augmented reality**: Historic repairs and preventative maintenance activities can be seen on a device as a person surveys an area to determine the best strategic maintenance method.

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