TCS iConnectingDots powered by SAP Leonardo

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DIGITAL DILEMMA
Applying the principles of Business 4.0 demands that organizations challenge deep-held operational assumptions and rethink relationships with employers, the wider ecosystem and competitors.

Rajesh Gopinathan CEO & MD, TCS

The convergence of intelligence, agility, automation, and the cloud has allowed for the creation of technology platforms to effectively harness abundant resources in real-time.
TCS iConnectingDo ts
SAP Leonardo Digital
Re-imagination Framework
TCS iConnectingDots Portfolio

7 Industry Footprints
12 Solution Offerings
50+ Planned Industries/Solutions
Pillars of TCS iConnectingDots – SAP Leonardo Innovation Platform

**TECHNOLOGY**
- Internet of Things
- Blockchain
- Machine Learning
- Advanced Analytics
- Big Data
- Mobile

**INDUSTRY**
- Travel & Transportation
- Life Sciences
- Consumer Products
- Energy & Resources
- Service/Communication
- Chemicals
- Engineering

**BUSINESS**
- Maintenance Repair Overhaul
- Supply Chain
- Customer Engagement
- Forecasting
TCS iConnectingDots Framework

**INDUSTRY USE-CASE**
12+ pre-built, ready to deploy industry solution frameworks
- Intelligent Rail Digital Maintenance
- Smart Maintenance
- Prognostic Maintenance
- Inventory Quality Ratio
- Digital Quality Assurance
- Energy Management
- Secure Pharma Product Transfer

**SAP TECHNOLOGY**
Solution design based on technology stack selection
- Internet of Things
- Blockchain
- Machine Learning
- Advanced Analytics
- Big Data
- Mobile

**CONSULTING LED BUSINESS SOLUTIONS**
Custom built solution service
- Business & Technology Landscape Analysis
- Technology Stack Selection
- Solution Development
- Addressing Business Challenges

**SOLUTION CATALOGUE**
(Indicative 2-3 weeks)

**DIGITAL TECHNOLOGY**
(Indicative 4-5 weeks)

**BUILT FOR “U”**
(Indicative 8-9 Weeks)

**Design & Consulting Services**
**Device & Data Management Services**
**Implementation Services**
**System Integration & Security**
iRDM – intelligent Rail Digital Maintenance and MS Azure
iRDM Solution Introduction

TCS iRDM cloud solution on SAP Leonardo platform, utilizes state of the art technology, deciphering structured & unstructured data, to enable predictive maintenance for track & wagon and drone damage detection for bridges.

Predictive Modeling & Analytics – Predictive modeling through machine learning on data provided by sensors throughout the network (wagon & tracks). Corrective maintenance performed before incidents occur.

Drone damage detection – Real-time structural analysis and 360° degree damage detection and 3D stress visualization for digital inspections.

Rolling Stock
- Real-time monitoring of parameters like Axle Temp, Vibration, Speed, Location, Impact Load, Bearing Noise Etc.
- Analyze multiple sensors simultaneously
- Find frequently occurring patterns
- Insights to improve asset performance

Track Infrastructure
- Onboard systems to take track geometry measurements
- Collect data from Onboard Ultrasonic, Laser sensors, video/thermal images
- Identify the potential problems and Tag GIS location
- Insights to improve asset performance

Bridge Inspection & Image Processing
- Concrete Bridges - Decks, Piers, Retaining Walls, and Abutments
- Measure length and max width of significant concrete cracks
- Identify crazing or large number of cracks in small area
- Identify rust-staining or white deposits of discoloration along lines of crack
iRDM – Predictive Modeling Logical Architecture

Railway Network
- Wayside sensors
- Track Geometry Inspection

Device Connectivity & Edge Component
- Smart Sensors/Devices
- Legacy Sensors/Devices

ECRE
TCS Edge Middleware

Smart Sensors/Devices

Microsoft Azure Platform

iRDM An SAP Leonardo Offering

- Device Connectivity & Edge Component
- Smart Sensors/Devices
- Legacy Sensors/Devices

iRDM User Interface (HTML5, d3, bootstrap, jQuery etc.)

iRDM Business Services
- Mechanical / Rolling Stock
- Section Engineer
- Traffic Operations
- Civil Way
- Signal & Telecom
- Other Support Staff

iRDM Data Model
- Alert Engine
- Rule Engine
- Predictive Failure
- Location Intelligence

SAP Cloud Integration
- SAP S/4 HANA

SAP Cloud Platform/SAP HANA

Microsoft Azure Platform
iRDM Damage Detection by Drones Logical Architecture

Bridges → Image Capture → Flight Controller

Image Processing Engine

Microsoft Azure Platform

SAP Cloud Platform/SAP HANA

Microsoft Azure Platform

iRDM An SAP Leonardo Offering

Mechanical/Rolling Stock → Section Engineer → Traffic Operations → Civil Way → Signal & Telecom → Other Support Staff

iRDM Business Services

Alerts → Rule Engine → Predictive Failure → Location Intelligence

iRDM Data Model

Security

HOT → WARM → COLD

iRDM Big Data Layer

SAP Cloud Integration

Machine Learning

SAP S/4 HANA

Asset Management → Procurement & Logistics → Service/Repair Request → Service Level Agreement

Microsoft Azure Platform
Preview of the Solution
We appreciate your considering TCS as your partner!

True certainty of success comes from working with a partner you trust to provide the insight, support and expertise that will propel your business forward. Experiencing certainty with TCS means you can count on partnership and leadership and results.

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