TRANSNET PORT TERMINALS

Scope of Work

Supply, Installation, and Commissioning of Standalone Wind Speed Monitoring System with Remote Visibility for Cranes

REVISION:

2025

1.INTRODUCTION

The purpose of this Scope of Work (SoW) is to define the requirements for the procurement, installation, and commissioning of a Standalone Wind Speed Monitoring System (WSMS) for cranes at MPT. The system will monitor real-time wind speed conditions to improve safety, ensure compliance with the South African Occupational Health and Safety (OHS) Act, and provide both local displays to crane operators and remote visibility to supervisors and safety officers at different locations.

2.PURPOSE

- Provide reliable real-time wind speed monitoring for crane operators.
- Ensure early warning alarms in case of high or dangerous wind speeds.
- Enable remote visibility for supervisors, safety officers, and managers via web dashboards and/or mobile devices.
- Improve operational safety, decision-making, and incident prevention.

3.SCOPE OF WORK

The contractor shall:

1. **Supply Equipment**

- Supply wind speed sensors (anemometers) compliant with SABS/SANS requirements.
- Supply operator cabin display units with real-time wind speed indicators.
- Provide alarm system (visual + audible) with configurable warning and critical thresholds.
- Provide remote connectivity modules.

2. **Install Systems**

- Mount anemometers securely on crane structures at appropriate height, ensuring maximum wind exposure.
- Install display and alarm units inside operator cabins.
- Integrate wireless/IoT communication modules for remote visibility.

3. **Commissioning**

- Configure system parameters, including alarm thresholds (e.g., 15 m/s warning, 20 m/s stop-work).
- Test all alarms, displays, and communication links.
- Provide system demonstration and acceptance testing.

4. **Documentation**

- Provide user manuals, maintenance guides.

Technical Specifications

Items	Description	Quantity
Anemometer (Wind Sensor)	• Type: Ultrasonic or cup anemometer. • Measurement Range: 0 – 60 m/s. • Accuracy: ±0.1 m/s. • Output: Digital signal (RS485/Modbus/4–20mA). • Environmental Rating: IP65 or higher. • Operating Temperature: –20°C to +60°C.	4
Local Display & Alarm Unit	• Display: Digital LCD or LED display for real-time wind speed. • Audible Alarm: ≥90 dB siren for threshold exceedance. • Visual Alarm: Red/Amber beacon lights. • Mounting: Operator cabin dashboard. • Power Supply: 220V AC / 24V DC (with UPS backup option).	4
Remote Communication Module	• GSM/4G/5G with SIM card OR Wi-Fi/Ethernet OR LoRaWAN gateway (site dependent). • Data Transmission: Secure encrypted connection. • Cloud Integration: Web-based dashboard with login credentials. • Alerts: SMS, WhatsApp, or push notifications for exceedances. • Data Logging: Minimum 6 months historical data storage.	
Dashboard & Remote Access	• Access: Browser-based + optional mobile app. • Real-time monitoring of multiple cranes. • Threshold-based alarms with notifications. • Data export (CSV/PDF) for compliance reporting.	