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(54) Title of the invention : INTELLIGENT AREA MANAGEMENT SYSTEM (IAMS)

(51) International classification : G06N0020000000, G06Q0010060000, G06Q0010000000, G05B0023020000, G06N0005040000	(71)**Name of Applicant :** 1)**Chitkara University** Address of Applicant :Chitkara University, Chandigarh-Patiala National Highway, Village Jhansla, Rajpura, Punjab - 140401, India Patiala ----------- ----------- 2)**Bluest Mettle Solutions Private Limited** **Name of Applicant : NA** **Address of Applicant : NA** (72)**Name of Inventor :** 1)**MISHRA, Rahul** Address of Applicant :ODC-4, Panchshil Tech Park, inside Courtyard by Marriott premises, Hinjewadi Phase - 1, Pune - 411057, Maharashtra, India. Pune ----------- ----------- 2)**SINGH, Dhiraj** Address of Applicant :ODC-4, Panchshil Tech Park, inside Courtyard by Marriott premises, Hinjewadi Phase - 1, Pune - 411057, Maharashtra, India. Pune ----------- ----------- 3)**MANTRI, Archana** Address of Applicant :Chitkara University, Chandigarh-Patiala National Highway, Village Jhansla, Rajpura, Punjab - 140401, India. Patiala ----------- -----------
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(57) Abstract :
The proposed Intelligent Area Management System (100) (IAMS) is a comprehensive solution designed to enhance safety, efficiency, and productivity at construction sites. It incorporates a network of strategically placed IoT sensors (102) that capture real-time data on environmental conditions, equipment status, worker locations, and movement patterns. This data is securely stored in a centralized database (104). Machine learning algorithms (106) analyze this information, identifying potential safety hazards, predicting equipment failures, and optimizing resource allocation. The system features a real-time monitoring and alert generation module (108) that instantly notifies site managers of safety breaches, equipment malfunctions, and abnormal conditions, allowing for timely intervention. Additionally, a proactive safety module (110) leverages predictive insights to suggest safety measures, reducing the risk of accidents. A predictive maintenance module (112) utilizes historical data and machine learning to foresee equipment failures, recommend maintenance schedules, and optimize equipment availability.

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