

(54) Title of the invention : NODE LOCALIZATION SYSTEM FOR UNDERWATER WIRELESS SENSOR NETWORK AND METHOD THEREOF

<p>(51) International classification :H04W0084180000, H04W0064000000, G01S0005020000, H04W0052020000, H04W0028240000</p> <p>(86) International Application No :NA Filing Date :NA</p> <p>(87) International Publication No : NA</p> <p>(61) Patent of Addition to Application Number :NA Filing Date :NA</p> <p>(62) Divisional to Application Number :NA Filing Date :NA</p>	<p>(71)Name of Applicant :</p> <p>1)Chitkara University Address of Applicant :Chitkara University, Chandigarh-Patiala National Highway, Village Jhansla, Rajpura, Punjab - 140401, India. -----</p> <p>2)Chitkara Innovation Incubator Foundation Name of Applicant : NA Address of Applicant : NA</p> <p>(72)Name of Inventor :</p> <p>1)GOYAL, Nitin Address of Applicant :Chitkara University Institute of Engineering and Technology, Chitkara University, Chandigarh-Patiala National Highway, Village Jansla, Rajpura, Punjab - 140401, India. -----</p> <p>2)NAIN, Mamta Address of Applicant :Chitkara University Institute of Engineering and Technology, Chitkara University, Chandigarh-Patiala National Highway, Village Jansla, Rajpura, Punjab - 140401, India. -----</p> <p>3)SHARMA, Manish Address of Applicant :Chitkara University Institute of Engineering and Technology, Chitkara University, Chandigarh-Patiala National Highway, Village Jansla, Rajpura, Punjab - 140401, India. -----</p> <p>4)KHULLAR, Vikas Address of Applicant :Chitkara University Institute of Engineering and Technology, Chitkara University, Chandigarh-Patiala National Highway, Village Jansla, Rajpura, Punjab - 140401, India. -----</p> <p>5)GARG, Nidhi Bansal Address of Applicant :Chitkara University Institute of Engineering and Technology, Chitkara University, Chandigarh-Patiala National Highway, Village Jansla, Rajpura, Punjab - 140401, India. -----</p> <p>6)SHARMA, Bhanu Address of Applicant :Chitkara University Institute of Engineering and Technology, Chitkara University, Chandigarh-Patiala National Highway, Village Jansla, Rajpura, Punjab - 140401, India. -----</p>
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(57) Abstract :

The invention discloses a node localization system (100) and method for underwater wireless sensor network to improve energy efficiency, lower localization delay, and error, and reduce localization cost, using an Energy-Efficient Localization method based on Mobility and propagation Delay Prediction (EEL-MDP) method. The system (100) comprises surface buoys (102) that float on the water, anchor nodes (108) that flow at different profundities, and sensor nodes (110) widely distributed at different water depths. Each anchor node (108) estimates and records its speed during each localization interval using the anchor node's mobility prediction method. The propagation delay is predicted and remunerated to achieve accurate localization. The sensor nodes (110) perform localization using the predicted speed vectors received from the anchor nodes.

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