**Abstract Submission**

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**ABSTRACT:**

Be aimed at the declining visibility of the leading mark caused by air pollution ，The Laser navigation system was designed based on the physical characteristics of the laser: directional lighting, very high brightness, Extremely very pure color. The system can be an alternative or adjunct to the existing leading mark,and the mariners or pilots can determine whether the vessel is in the channel by observation of the laser lights. Further more, the laser beacon prototype system was developed, and some experiments have been done using the system.Experimental results show，the  visibility distance of one Watts Power laser beacon was more than 20 km in daytime, and at night the distance increased to 30 km. In the horizontal direction，the system has good boundary sharpness，and the horizontal precision of is less than 5m within 10km range. Furthermore, the system has further visibility distance in poor visibility conditions, for example, fog, haze. Based on limited experimental results, the laser beacon has 3 times visible distance than normal light in poor visibility.