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Vac-Vector Hyperloop Transportation System

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The hyperloop is an advanced, next-generation transportation system, which is designed to transport passengers and cargo through near vacuums at extremely high speeds. Under these low-pressure conditions, the air resistance and friction are incredibly cut down, and the pods can reach high speeds of over 1200 km/h with a very high energy efficiency and sustainability. By avoiding atmospheric pressure in closed tubes, the Hyperloop does away with rolling resistance by substituting the classic wheel with magnetic levitation and linear electric propulsion, which leads to the silky and silent travel free of friction and maintenance. The system is a combination of several developed sub-systems; Levitation gives the frictionless lifting in the form of electromagnetic or electrodynamic suspension; Propulsion gives the accelerated and braked movement in linear motors; and Track gives the structural and magnetic guidance. Tube has low pressure vacuum pumps and sensors, and Electrical and embedded systems provide automation, power and real-time monitors. Braking and suspension sub-systems maintain safety, frame, chassis, and thermal management sub-systems are in place to retain its strength, stability, and optimal temperature. The cabin is comfortable and safe and stations make boarding and integration to city networks easy. The hyperloop is a sustainable breakthrough in world high-speed transportation with the help of effective networking, business model, and socio-economic impact. In this paper, various sub-systems of hyperloop transportation system are discussed.

Keywords: Hyperloop, next-generation, transportation, near vacuums, sustainability transportation, sub-system, UNSD.