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Systems Design - Hyperloop Subsystem Design

Lei Cheng, Cody O'Connor, Jonathan Metzger, Kirin Elahi, Brian Katan, and Anthony Citriniti

*Department of Systems Science & Industrial Engineering
Binghamton University, P.O. Box 6000, Binghamton, New York, 13902, USA*

Corresponding author's Email: lcheng12@binghamton.edu

Author Note

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Abstract: The Hyperloop seeks to decrease transportation time and costs by having a transport pod utilizing magnetic levitation, air levitation, and magnetic propulsion subsystems to travel within a very low pressured tube. The preliminary design of the Hyperloop has been released by SpaceX, challenging students and companies globally to further the modeling and design of the pod. Using system design engineering, our group successfully created project requirements which became the basis of our subsystem design project as well as our goals. We also used principles of systems engineering to create feasible scheduling and simulation plans in order to take on this conceptual project. Our subsystems include air compression, magnetic levitation, cooling, and air levitation. Overall, our team was invited to present our design at the SpaceX Hyperloop Design Weekend at Texas A&M University and we are currently onto our phase of testing and modeling for our specific design.

Key words: Systems engineering, hyperloop, SpaceX, levitation