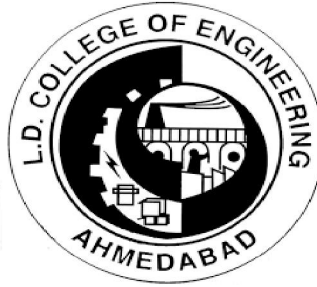


GUJARAT TECHNOLOGICAL UNIVERSITY

CHANDKHEDA, AHMEDABAD



L. D. COLLEGE OF ENGINEERING

A report on

Hyperloop

A 5th mode of Transportation

Under the Subject of

DESIGN ENGINEERING – 2B. (2150005)

B.E. SEMESTER – VI (MECHANICAL ENGINEERING)

Start date 26/8/16

End date 10/6/18

Submitted by

- 1 PREET SHAH (150280119095)
- 2 MANN SHAH (150280119105)
- 3 MOHAK SHAH (150280119106)
- 4 MEET SHUKLA (150280119109)

Faculty Guide

Prof. Y. D. Vora

Head of Department

Prof. G. H. Upadhyay

Introduction To Hyperloop

Our group has opted “A Hyperloop” new mode of transportation, technology is evolving day by day which initiated this concept from imagination to real time thinking. Hyperloop is futuristic train can run at speed of over 1000 km/h, blistering fast , fast than bullet trains. It’s arrangement can be seen as byte of data traveling through the network cable, each capsule shape container serves as sitting area and capsule travel through low pressure tube called “loop” , whole setup runs on solar energy . so our idea is to come with a transport system which is more safe , rapid, advance and environment friendly .We did our research and we designed our product .Design thinking is human centered ,prototype driven process for innovation that can be applied to product ,service and business design.

Product feature:-

- ❖ Runs from solar energy
- ❖ Energy efficient
- ❖ Works in any weather
- ❖ Earthquake resistant

Purposes:-

- ❖ Green transportation
- ❖ Blistering fast
- ❖ 5th mode of transport
- ❖ Tap an untapped need , innovative concept to improve road transport

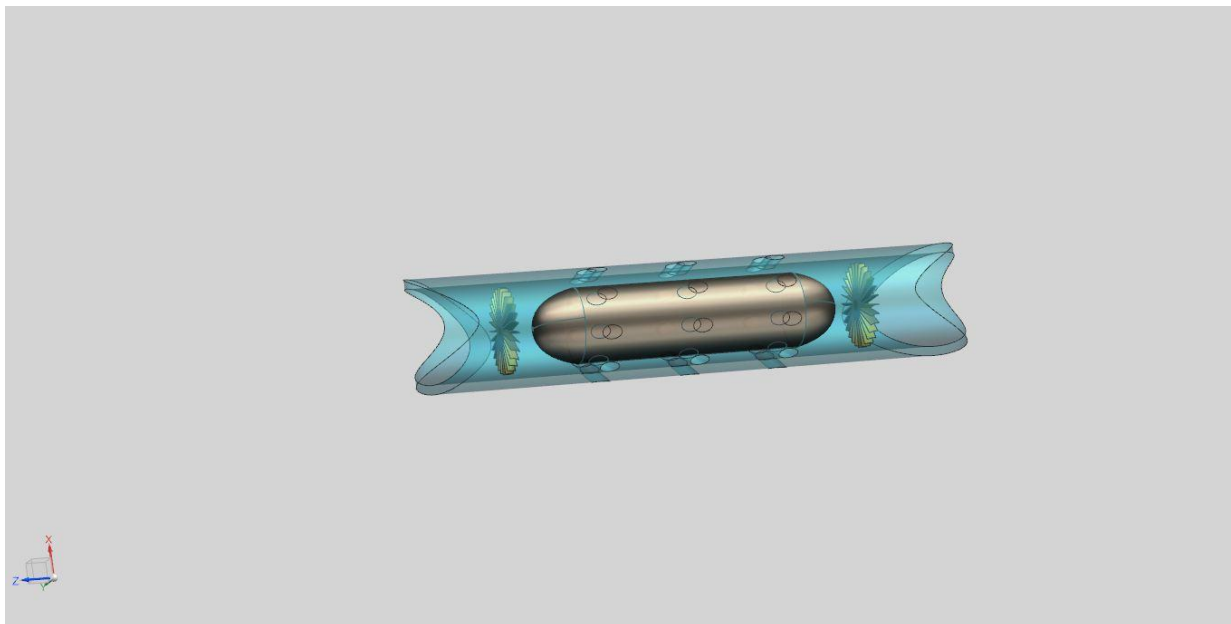
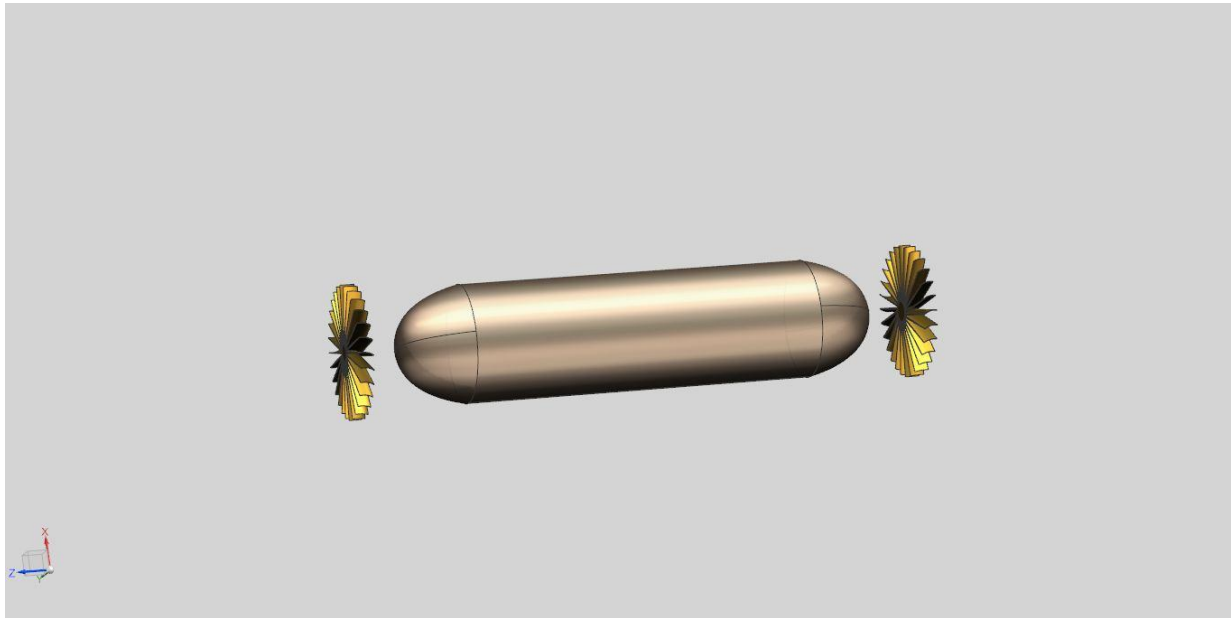
People:-

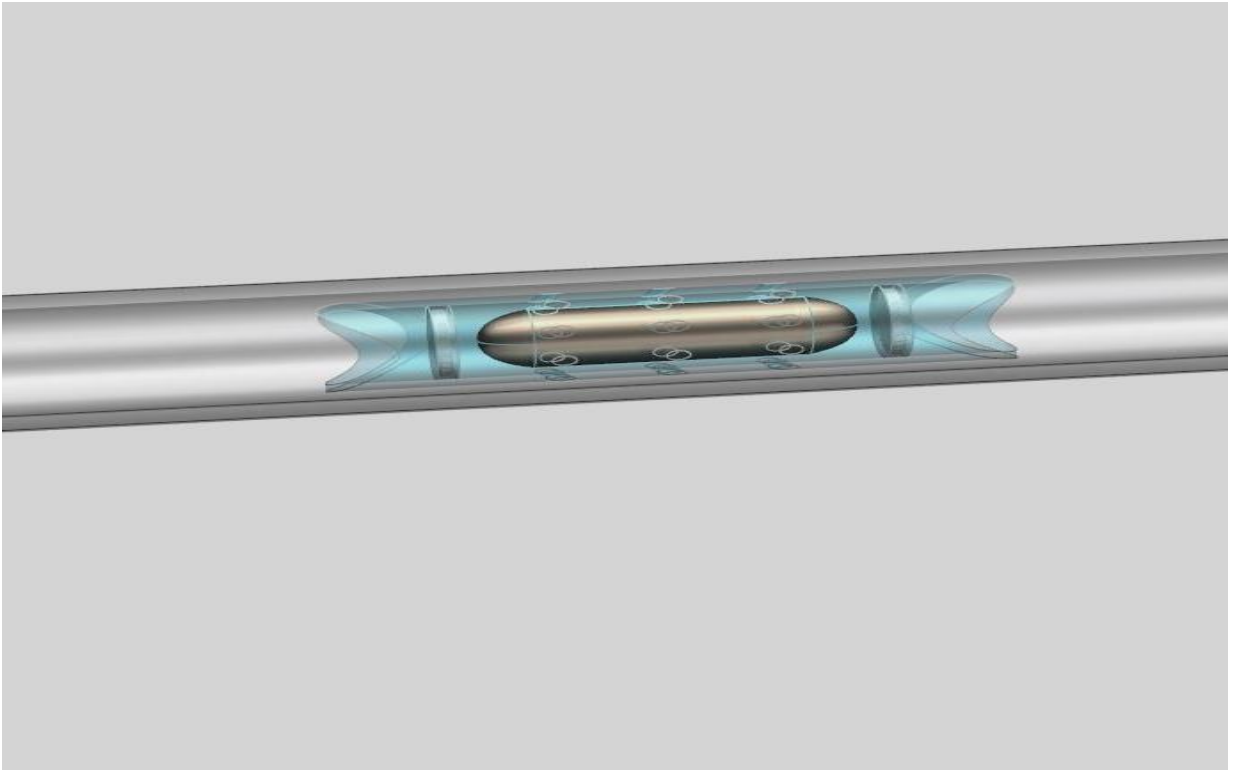
- ❖ Business people
- ❖ Entrepreneur
- ❖ Civilian
- ❖ Armed forces
- ❖ Physically handicapped
- ❖ Politician and civil servant

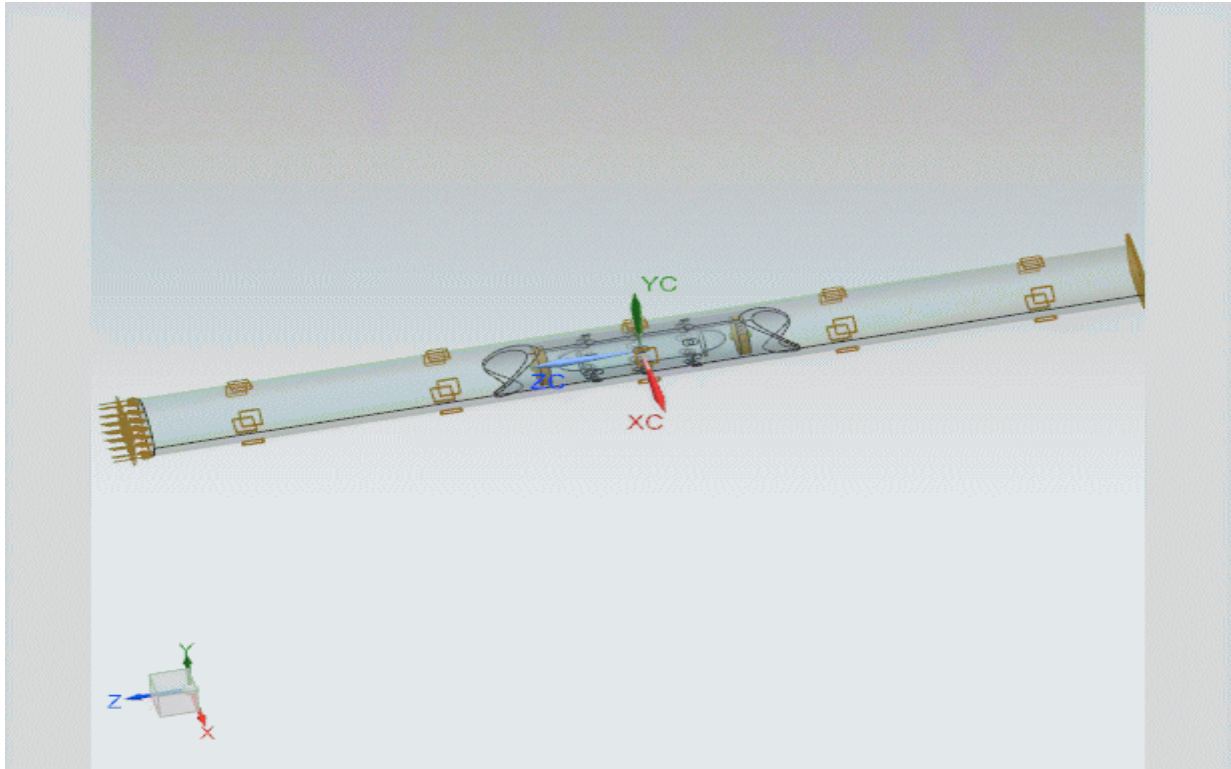
Components:-

- ❖ Detachable bolted pylon
- ❖ Capsule
- ❖ Electromagnetic brake
- ❖ Interior tubing
- ❖ Bulkhead
- ❖ Propulsion

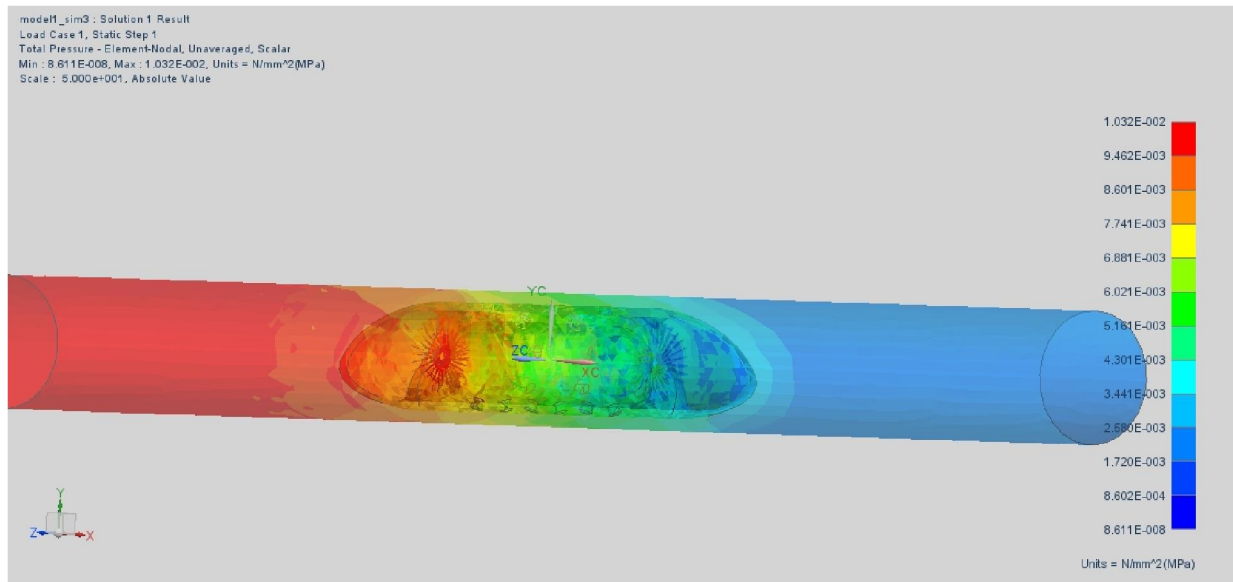
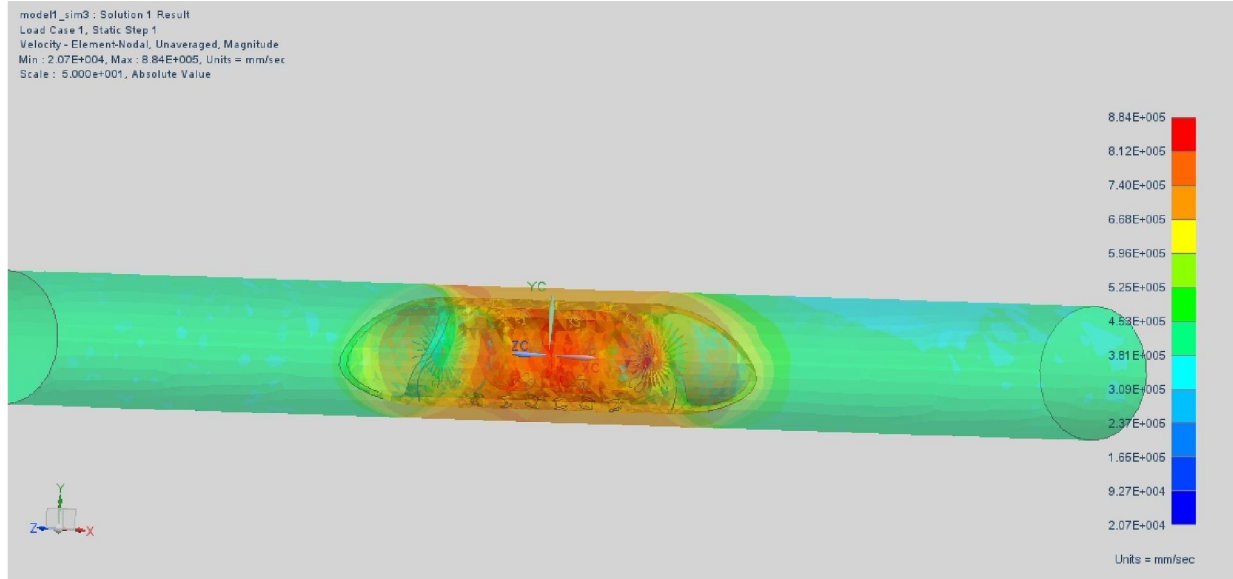
Modelling & Boundary Condition



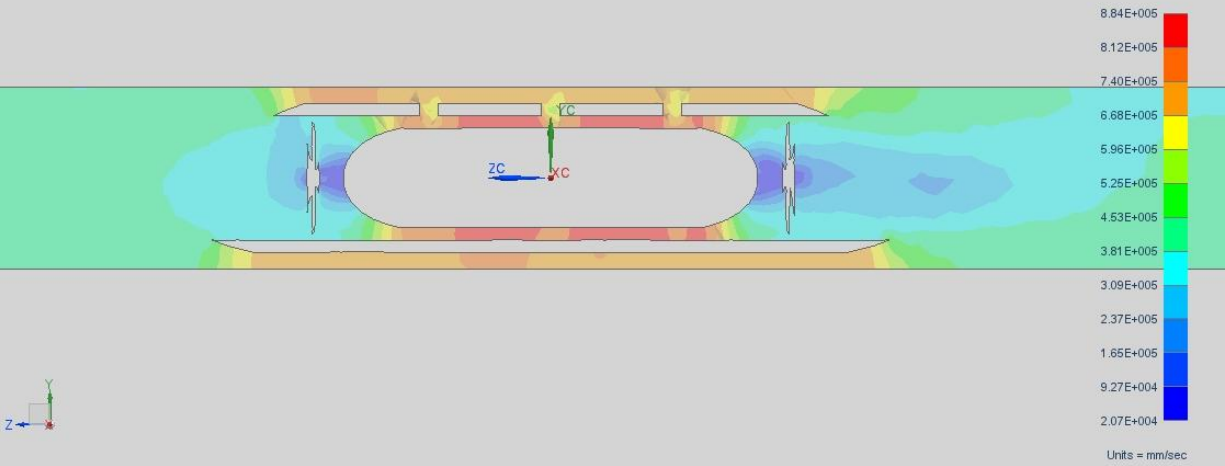




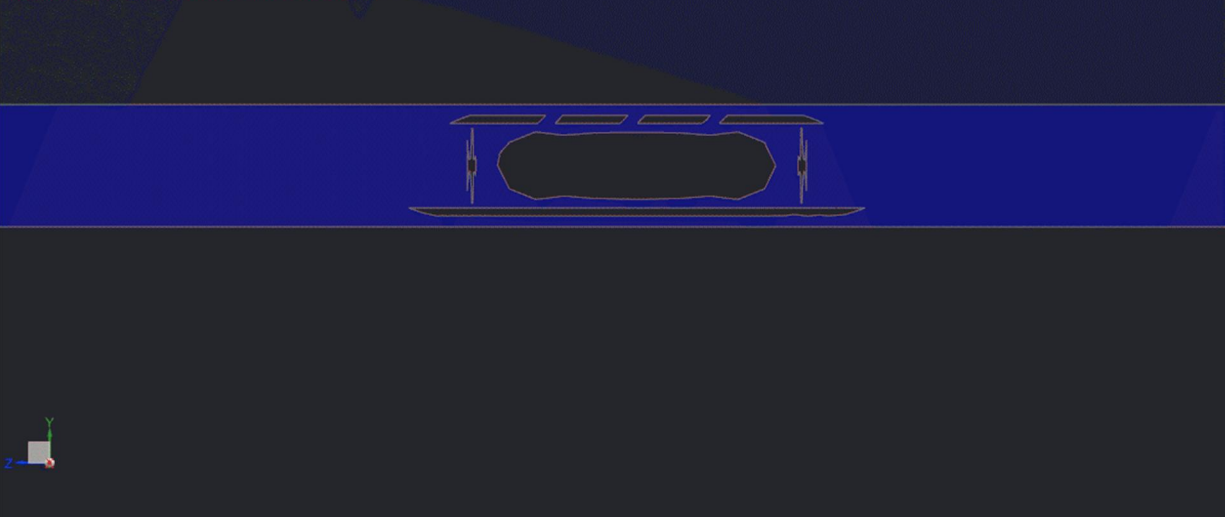
Simulation Result



model1_sim3 : Solution 1 Result
Load Case 1, Static Step 1
Velocity - Element-Nodal, Unaveraged, Magnitude
Min : 2.07E+004, Max : 8.84E+005, Units = mm/sec
Scale : 5.000E+001, Absolute Value



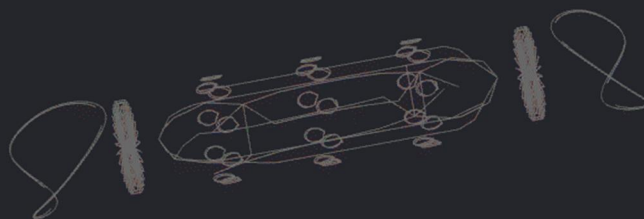
hyp1_sim1 : Solution 1 Result
Load Case 1, Static Step 1
Total Pressure - Element-Nodal, Unaveraged, Scalar



hyp1_sim1 : Solution 1 Result
Load Case 1, Static Step 1
Total Pressure - Element-Nodal, Unaveraged, Scalar



hyp1_sim1 : Solution 1 Result
Load Case 1, Static Step 1
Velocity - Element-Nodal, Unaveraged, Magnitude
Min : 7.1486, Max : 1801.2003, Units = km/hr
Animation Frame 1 of 8

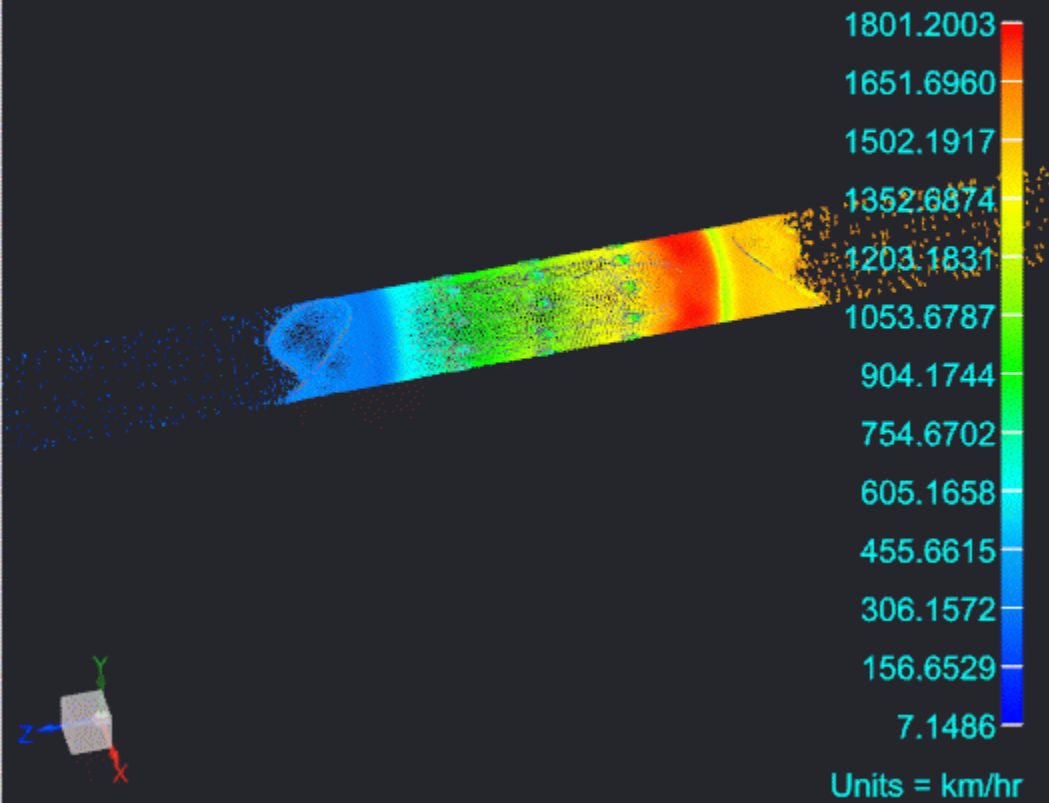


hyp1_sim1 : Solution 1 Result

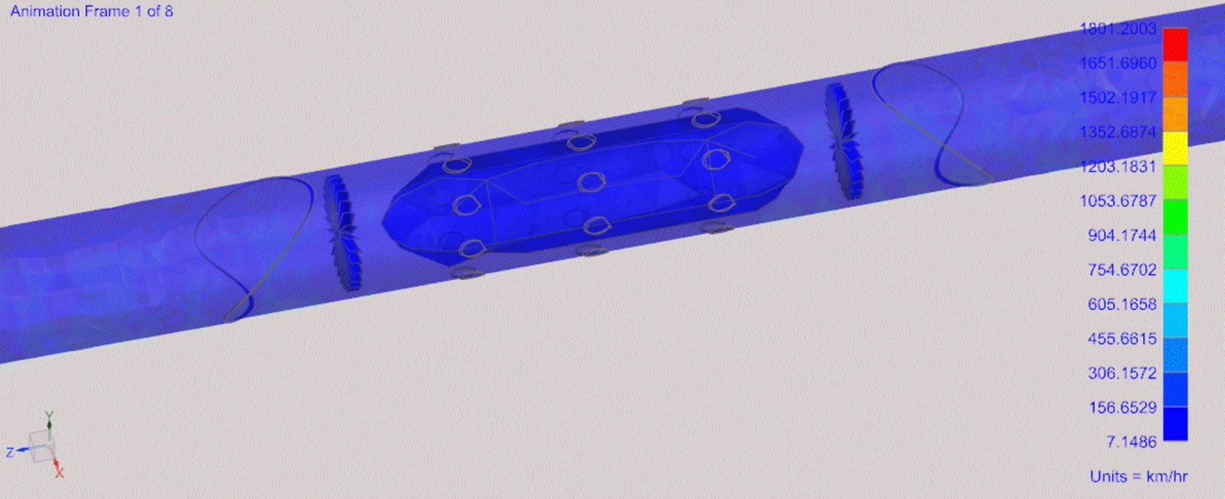
Load Case 1, Static Step 1

Velocity - Element-Nodal, Unaveraged, Magnitude

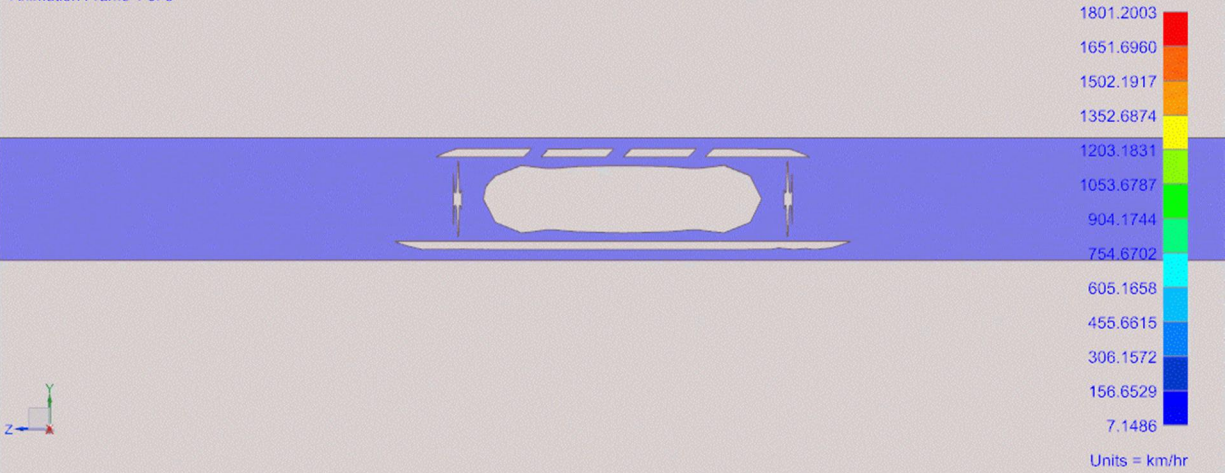
Min : 7.1486, Max : 1801.2003, Units = km/hr



hyp1_sim1 : Solution 1 Result
Load Case 1, Static Step 1
Velocity - Element-Nodal, Unaveraged, Magnitude
Min : 7.1486, Max : 1801.2003, Units = km/hr
Animation Frame 1 of 8



hyp1_sim1 : Solution 1 Result
Load Case 1, Static Step 1
Velocity - Element-Nodal, Unaveraged, Magnitude
Min : 7.1486, Max : 1801.2003, Units = km/hr
Animation Frame 1 of 8

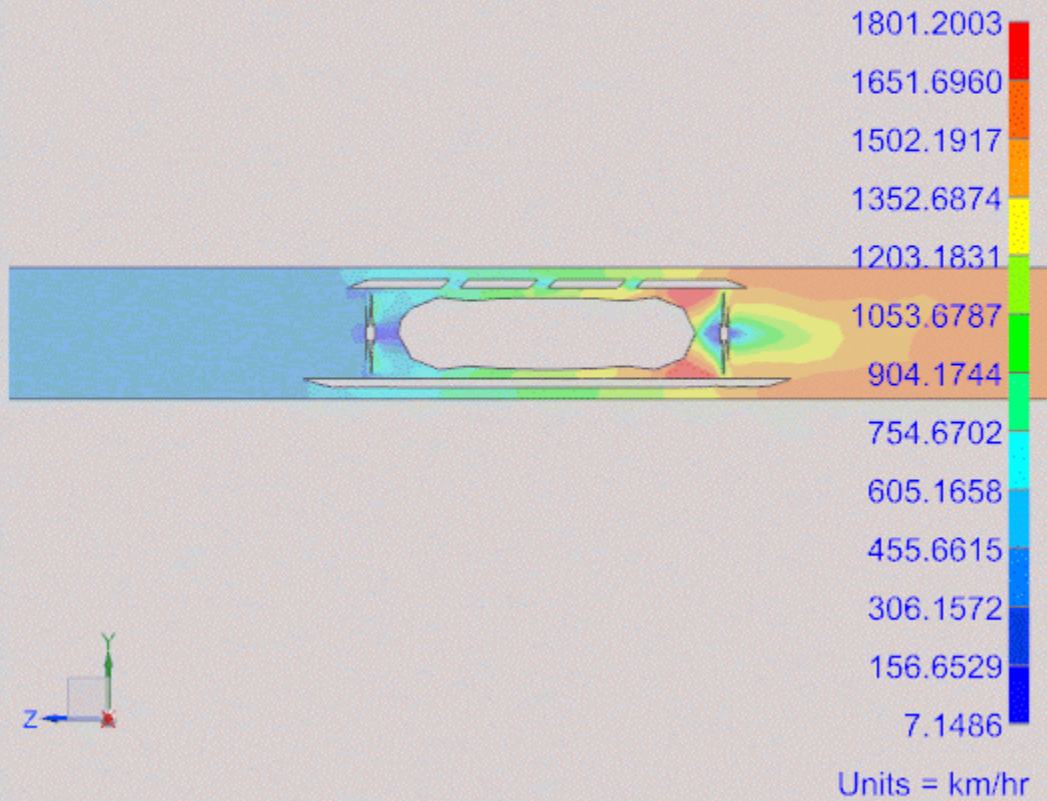


hyp1_sim1 : Solution 1 Result

Load Case 1, Static Step 1

Velocity - Element-Nodal, Unaveraged, Magnitude

Min : 7.1486, Max : 1801.2003, Units = km/hr

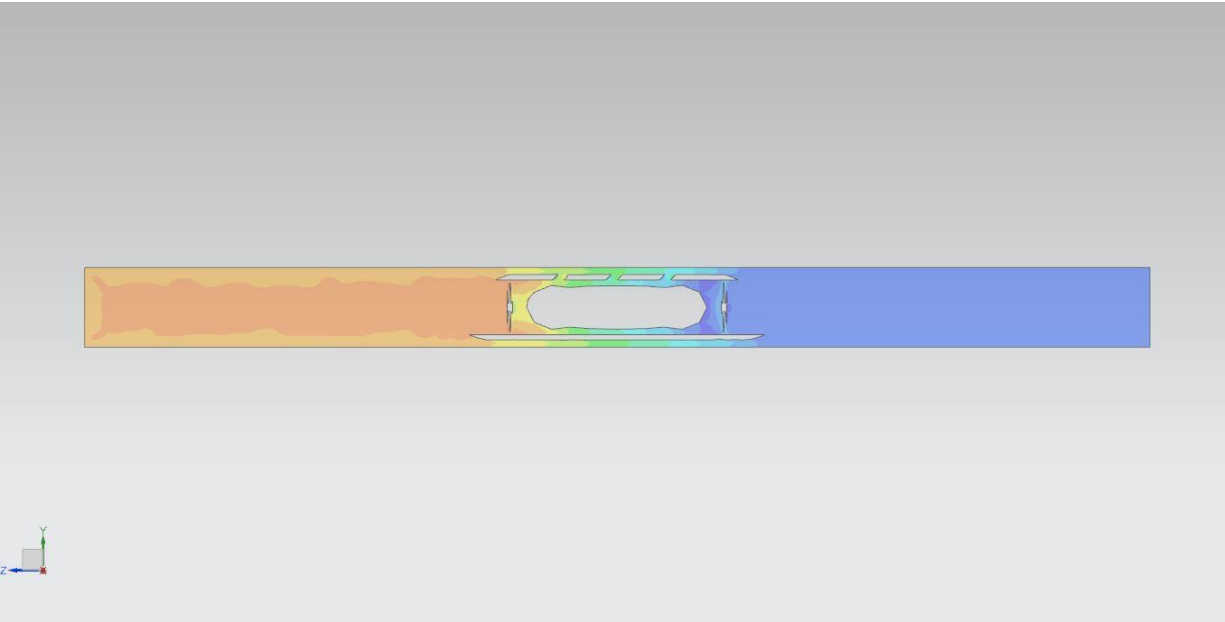
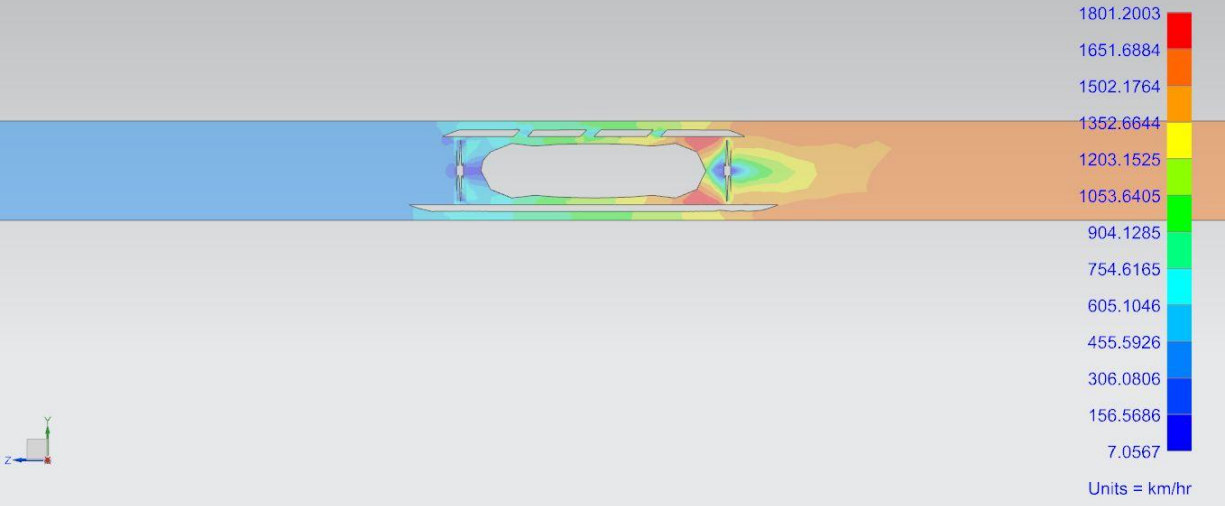


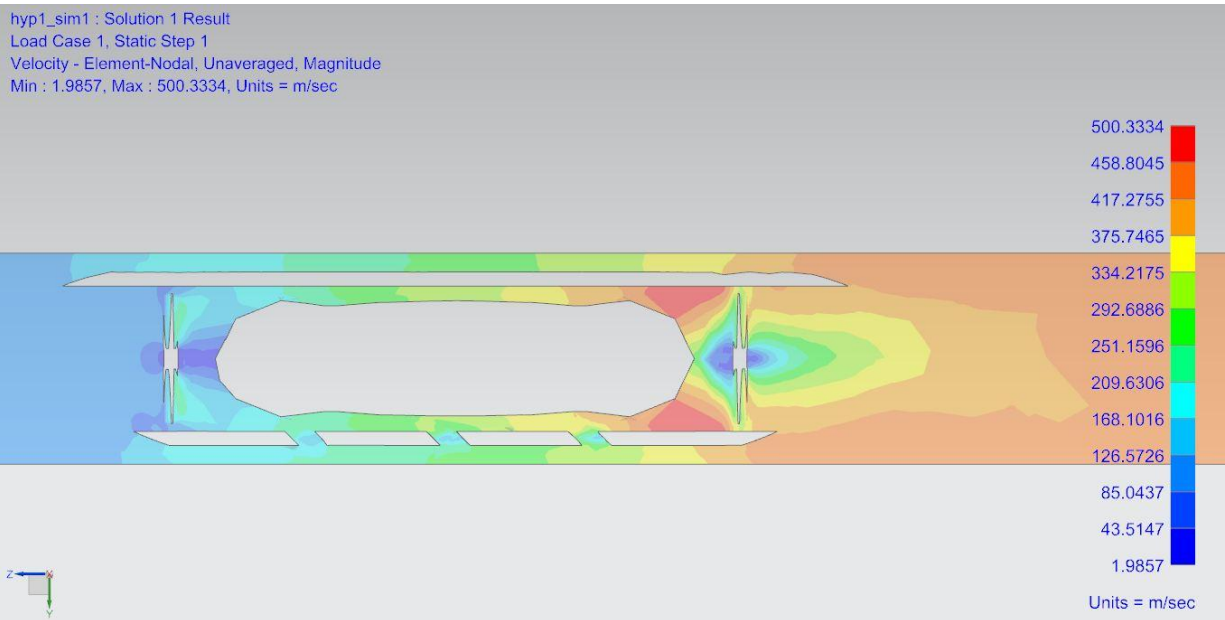
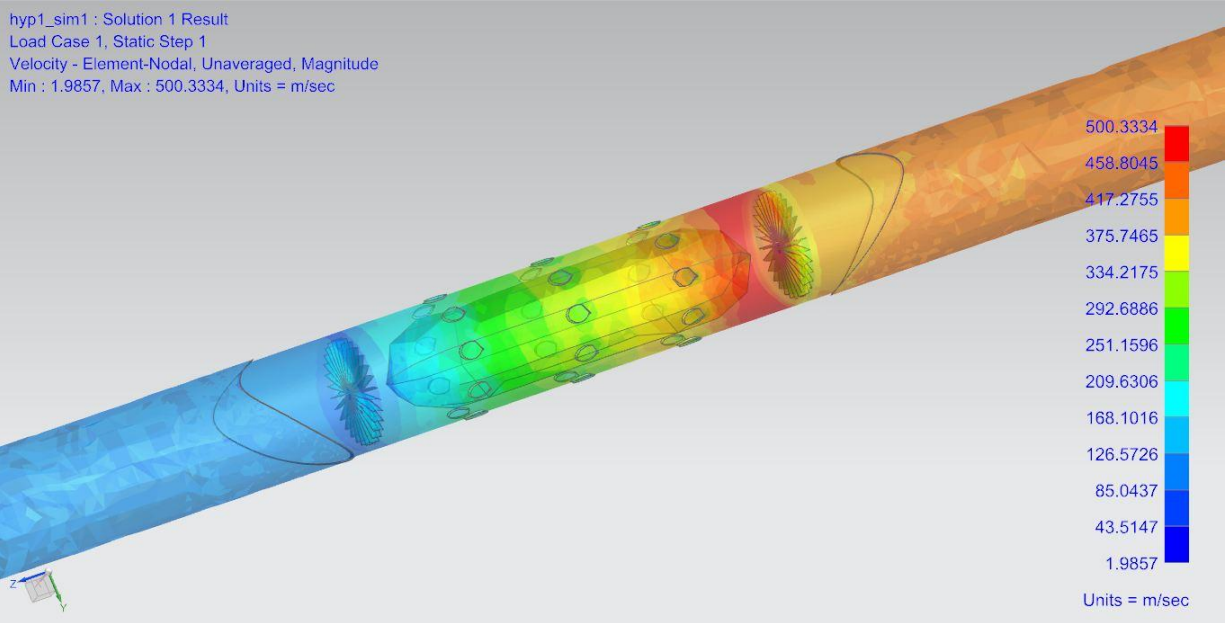
hyp1_sim1 : Solution 1 Result

Load Case 1, Static Step 1

Relative Velocity - Element-Nodal, Unaveraged, Magnitude

Min : 7.0567, Max : 1801.2003, Units = km/hr





hyp1_sim1 : Solution 1 Result

Load Case 1, Static Step 1

Velocity - Element-Nodal, Unaveraged, Magnitude

Min : 1.9857, Max : 500.3334, Units = m/sec

