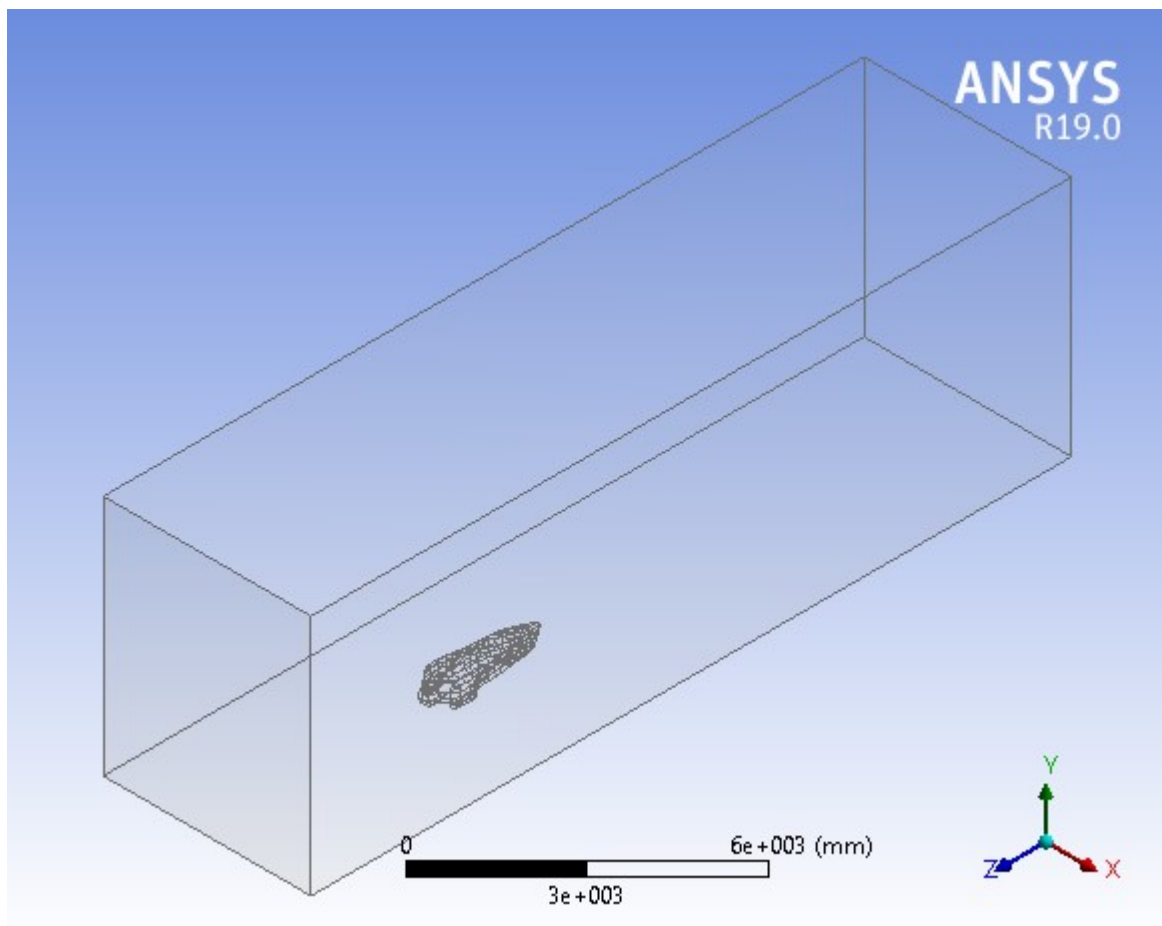


# Fluid Flow (Fluent)

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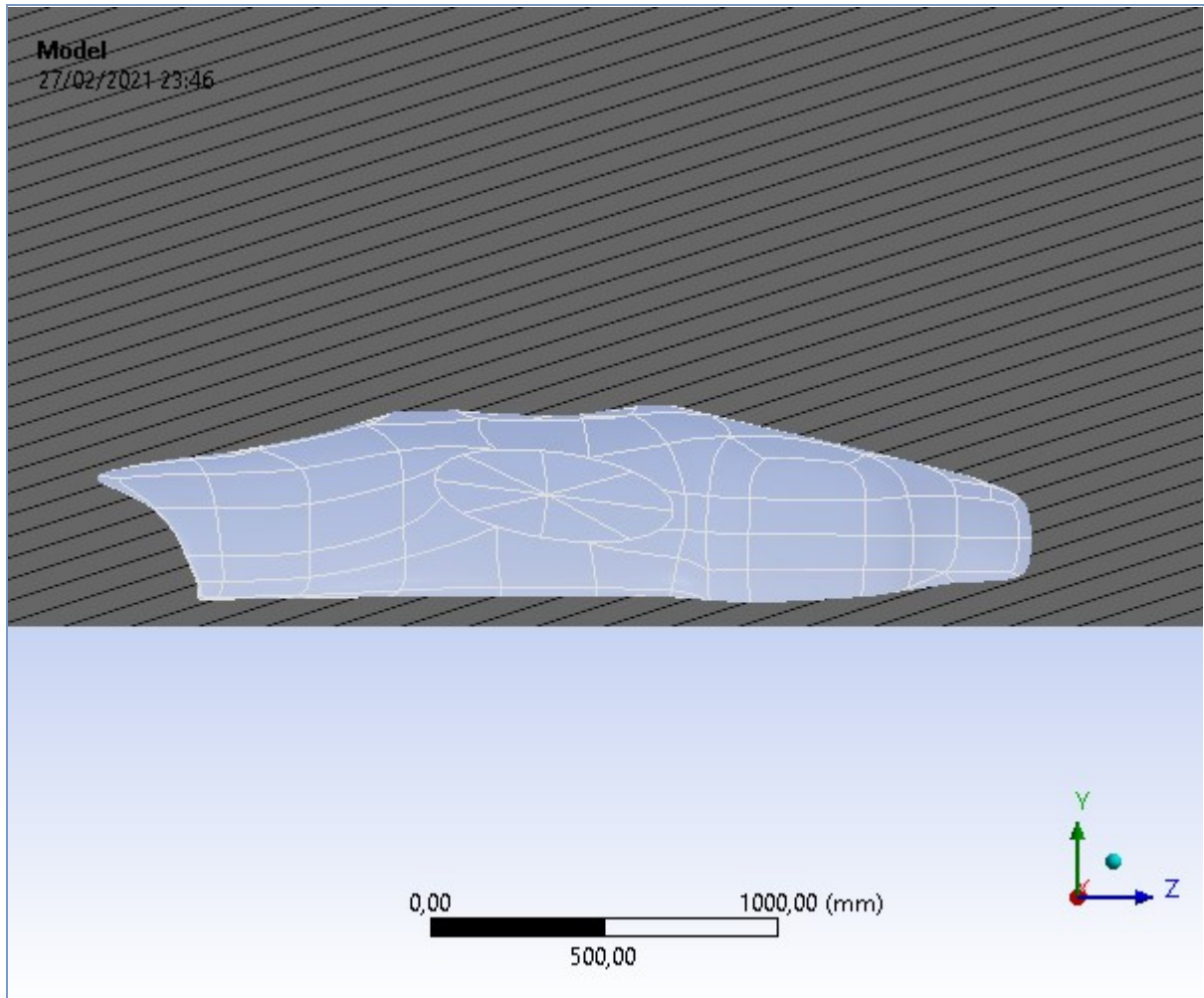
**Subject:** Mobil Listrik Geni Biru KMHE 2020  
**Author:** Ade Sudaryono  
**Prepared For:** Tugas Akhir  
**Date:** 2021-2-27  
**Comments:**





# Project

First Saved	Tuesday, February 23, 2021
Last Saved	Saturday, February 27, 2021
Product Version	19.0 Release
Save Project Before Solution	No
Save Project After Solution	No



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## Units

**TABLE 1**

Unit System	Metric (mm, kg, N, s, mV, mA) Degrees rad/s Celsius
Angle	Degrees
Rotational Velocity	rad/s
Temperature	Celsius

## Model (A3)

### Geometry

**TABLE 2**  
**Model (A3) > Geometry**

Object Name	<i>Geometry</i>
State	Fully Defined
<b>Definition</b>	
Source	C:\Users\Ade Sudar\Desktop\4 rd_files\dp0\FFF-1\DM\FFF-1.agdb
Type	DesignModeler
Length Unit	Meters
<b>Bounding Box</b>	
Length X	4838,4 mm
Length Y	5640,2 mm
Length Z	17715 mm
<b>Properties</b>	
Volume	4,8281e+011 mm <sup>3</sup>
Scale Factor Value	1,
<b>Statistics</b>	
Bodies	1
Active Bodies	1
Nodes	858049
Elements	468960
Mesh Metric	Skewness
Min	7,97984937922713E-04
Max	0,826861104280061
Average	0,234728253093231
Standard Deviation	0,123688722689648
<b>Basic Geometry Options</b>	
Parameters	Independent
Parameter Key	
Attributes	Yes
Attribute Key	

Named Selections	Yes
Named Selection Key	
Material Properties	Yes
<b>Advanced Geometry Options</b>	
Use Associativity	Yes
Coordinate Systems	Yes
Coordinate System Key	
Reader Mode Saves Updated File	No
Use Instances	Yes
Smart CAD Update	Yes
Compare Parts On Update	No
Analysis Type	3-D
Decompose Disjoint Geometry	Yes
Enclosure and Symmetry Processing	No

**TABLE 3**  
**Model (A3) > Geometry > Parts**

Object Name	<i>Air</i>
State	Meshed
<b>Graphics Properties</b>	
Visible	Yes
Transparency	0,1
<b>Definition</b>	
Suppressed	No
Coordinate System	Default Coordinate System
Behavior	None
Reference Frame	Lagrangian
<b>Material</b>	
Assignment	
Fluid/Solid	Defined By Geometry (Fluid)
<b>Bounding Box</b>	
Length X	4838,4 mm
Length Y	5640,2 mm
Length Z	17715 mm
<b>Properties</b>	
Volume	4,8281e+011 mm <sup>3</sup>
Centroid X	-2,0944 mm
Centroid Y	2823,4 mm
Centroid Z	-3863,5 mm
<b>Statistics</b>	
Nodes	858049
Elements	468960
Mesh Metric	Skewness
Min	7,97984937922713E-04
Max	0,826861104280061
Average	0,234728253093231
Standard Deviation	0,123688722689648

## Coordinate Systems

**TABLE 4**  
**Model (A3) > Coordinate Systems > Coordinate System**

Object Name	<i>Global Coordinate System</i>	<i>ZXPlane</i>
State	Fully Defined	
<b>Definition</b>		
Type	Cartesian	

Coordinate System ID	0,	
Coordinate System		Program Controlled
APDL Name		
Suppressed		No
<b>Origin</b>		
Origin X	0, mm	
Origin Y	0, mm	
Origin Z	0, mm	
Define By		Global Coordinates
Location		Defined
<b>Directional Vectors</b>		
X Axis Data	[ 1, 0, 0, ]	[ 0, 0, 1, ]
Y Axis Data	[ 0, 1, 0, ]	[ 1, 0, 0, ]
Z Axis Data	[ 0, 0, 1, ]	[ 0, 1, 0, ]
<b>Principal Axis</b>		
Axis		X
Define By		Fixed Vector
<b>Orientation About Principal Axis</b>		
Axis		Y
Define By		Fixed Vector
<b>Transformations</b>		
Base Configuration		Absolute
Transformed Configuration		[ 0, 0, 0, ]

## Mesh

**TABLE 5**  
**Model (A3) > Mesh**

Object Name	<i>Mesh</i>
State	Solved
<b>Display</b>	
Display Style	Body Color
<b>Defaults</b>	
Physics Preference	CFD
Solver Preference	Fluent
Export Format	Standard
Export Preview Surface Mesh	No
Element Order	Program Controlled
<b>Sizing</b>	
Size Function	Proximity and Curvature
Max Face Size	Default (960,530 mm)
Mesh Defeaturing	Yes
Defeature Size	Default (4,80270 mm)
Growth Rate	Default (1,20 )
Min Size	Default (9,60530 mm)
Max Tet Size	Default (1921,10 mm)
Curvature Normal Angle	Default (18,0 °)
Proximity Min Size	Default (9,60530 mm)
Num Cells Across Gap	Default (3)
Proximity Size Function Sources	Faces and Edges
Bounding Box Diagonal	19211 mm
Average Surface Area	1,8411e+006 mm <sup>2</sup>
Minimum Edge Length	0,993530 mm
<b>Quality</b>	
Check Mesh Quality	Yes, Errors
Target Skewness	Default (0.900000)

Smoothing	High
Mesh Metric	Skewness
Min	7,9798e-004
Max	0,82686
Average	0,23473
Standard Deviation	0,12369
<b>Inflation</b>	
Use Automatic Inflation	None
Inflation Option	Smooth Transition
Transition Ratio	0,272
Maximum Layers	5
Growth Rate	1,2
Inflation Algorithm	Pre
View Advanced Options	No
<b>Assembly Meshing</b>	
Method	None
<b>Advanced</b>	
Number of CPUs for Parallel Part Meshing	Program Controlled
Straight Sided Elements	No
Number of Retries	0
Rigid Body Behavior	Dimensionally Reduced
Triangle Surface Mesher	Program Controlled
Topology Checking	Yes
Pinch Tolerance	Default (8,64480 mm)
Generate Pinch on Refresh	No
<b>Statistics</b>	
Nodes	858049
Elements	468960

**TABLE 6**  
**Model (A3) > Mesh > Mesh Controls**

Object Name	<i>Patch Conforming Method</i>	<i>Inflation</i>
State	Fully Defined	
<b>Scope</b>		
Scoping Method	Geometry Selection	
Geometry	1 Body	
<b>Definition</b>		
Suppressed	No	
Method	Tetrahedrons	
Algorithm	Patch Conforming	
Element Order	Use Global Setting	
Boundary Scoping Method		Named Selections
Boundary		Multiple Entities
Inflation Option		First Aspect Ratio
First Aspect Ratio		5
Maximum Layers		5
Growth Rate		1,2
Inflation Algorithm		Pre

## Named Selections

**TABLE 7**  
**Model (A3) > Named Selections > Named Selections**

Object Name	<i>Inlet</i>	<i>Road</i>	<i>Opening</i>	<i>Car</i>	<i>Outlet</i>
State	Fully Defined				
<b>Scope</b>					

Scoping Method	Geometry Selection				
Geometry	1 Face		3 Faces	228 Faces	1 Face
<b>Definition</b>					
Send to Solver	Yes				
Protected	Program Controlled				
Visible	Yes				
Program Controlled Inflation	Exclude				
<b>Statistics</b>					
Type	Imported				
Total Selection	1 Face		3 Faces	228 Faces	1 Face
Surface Area	2,729e+007 mm <sup>2</sup>	8,5713e+007 mm <sup>2</sup>	2,8555e+008 mm <sup>2</sup>	4,9693e+006 mm <sup>2</sup>	2,729e+007 mm <sup>2</sup>
Suppressed	0				
Used by Mesh Worksheet	No				