Week 10 Meeting Material

Junwoo Hwang 23.01.2023

Vnom 10.0m/s, Vmax 12.0m/s, Vpath 10.0 m/s, Vg = 10.0m/s, Vapproach_min = 5.0m/s Velocity parallel to path 12 10 parallel [m/s] - TI NPFG → TJ NPFG BF Stripped -- TJ NPFG Cartesian V approach min 10 20 30 40 50 60 80 Track error [m] Velocity orthogonal to path 12 V orthogonal [m/s] ~ 01 TJ NPFG TJ NPFG BF Stripped -- TJ NPFG Cartesian V_approach min --- V_approach_minimum --- V_tk 10 20 30 40 50 60 70 80 Track error [m] Vector Field (Path = +Y direction, passing through origin) 15 10 0 -5

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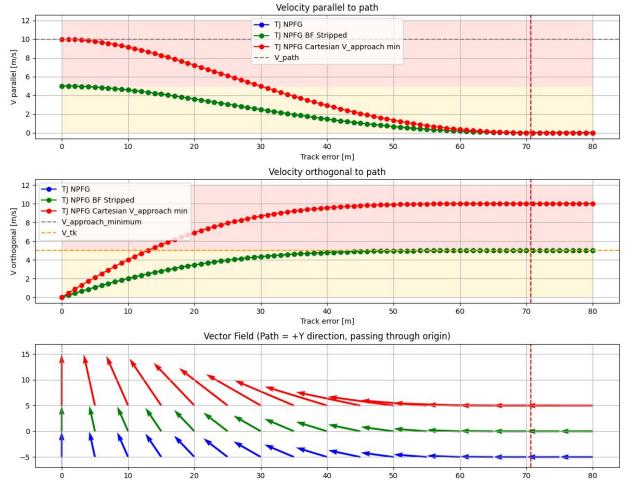
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Nominal Case

V_nom	10
V_path	10 (= V_nom, for fixed-wing)
V_approach_min	5 (lower than V_nom, won't affect)

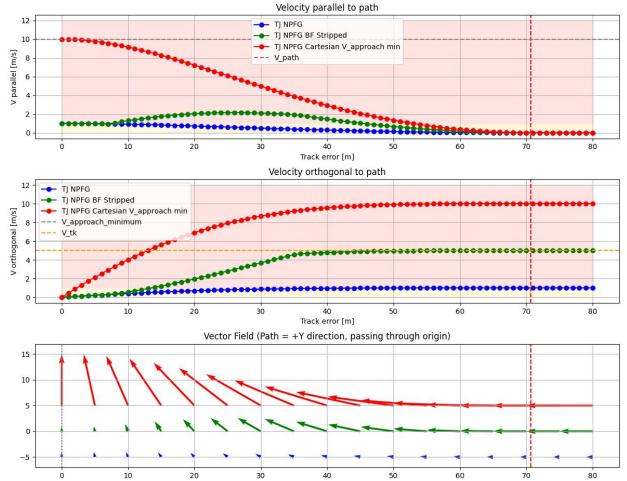
 $Vnom\ 5.0m/s,\ Vmax\ 12.0m/s,\ Vpath\ 10.0\ m/s,\ Vg=10.0m/s,\ Vapproach_min=5.0m/s$



Nominal Velocity reduced

V_nom	5
V_path	10 (= V_nom, for fixed-wing)
V_approach_min	5 (lower than V_nom, won't affect)
V_ground	10 (= V_approach, arbitrarily match)

 $Vnom\ 1.0m/s,\ Vmax\ 12.0m/s,\ Vpath\ 10.0\ m/s,\ Vg=10.0m/s,\ Vapproach_min=5.0m/s$



Nominal Velocity reduced further

V_nom	1
V_path	10 (= V_nom, for fixed-wing)
V_approach_min	5 (lower than V_nom, won't affect)
V_ground	10 (= V_approach, arbitrarily match)

Vnom 10.0m/s, Vmax 12.0m/s, Vpath 10.0 m/s, Vg = 10.0m/s, Vapproach_min = 5.0m/s Velocity parallel to path 12 10 parallel [m/s] - TI NPFG → TJ NPFG BF Stripped TJ NPFG Cartesian V approach min 10 20 30 40 50 60 80 Track error [m] Velocity orthogonal to path 12 V orthogonal [m/s] ~ 01 TJ NPFG TJ NPFG BF Stripped -- TJ NPFG Cartesian V_approach min --- V_approach_minimum --- V_tk 10 20 30 40 50 60 70 80 Track error [m] Vector Field (Path = +Y direction, passing through origin) 15 10 0 -5

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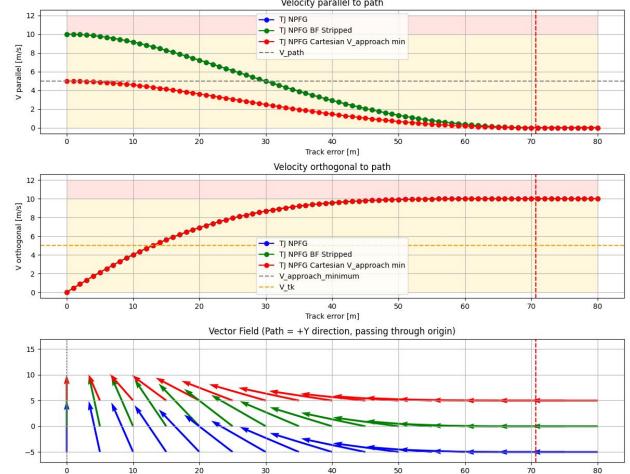
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Nominal Case (Again)

V_nom	10
V_path	10 (= V_nom, for fixed-wing)
V_approach_min	5 (lower than V_nom, won't affect)
V_ground	10 (= V_approach, arbitrarily match)

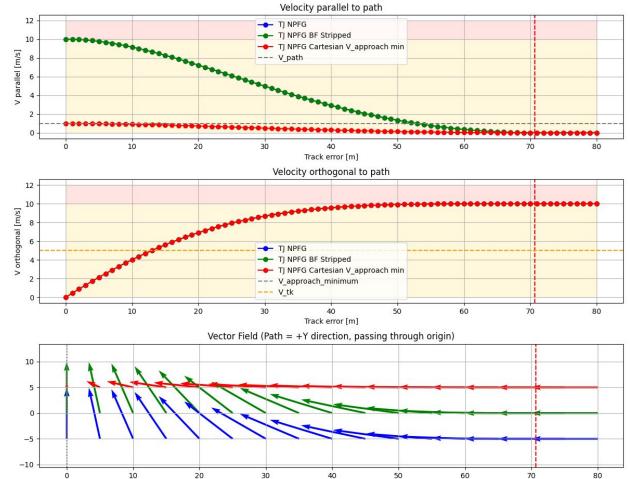
Vnom 10.0m/s, Vmax 12.0m/s, Vpath 5.0 m/s, Vg = 10.0m/s, Vapproach_min = 5.0m/s Velocity parallel to path



Path Velocity reduced

V_nom	10
V_path	5
V_approach_min	5 (lower than V_nom, won't affect)
V_ground	10 (= V_approach, arbitrarily match)

Vnom 10.0m/s, Vmax 12.0m/s, Vpath 1.0 m/s, Vg = 10.0m/s, Vapproach_min = 5.0m/s



Path Velocity reduced further

V_nom	10
V_path	1
V_approach_min	5 (lower than V_nom, won't affect)
V_ground	10 (= V_approach, arbitrarily match)

Vnom 10.0m/s, Vmax 12.0m/s, Vpath 10.0 m/s, Vg = 10.0m/s, Vapproach_min = 5.0m/s Velocity parallel to path 12 10 parallel [m/s] - TI NPFG → TJ NPFG BF Stripped TJ NPFG Cartesian V approach min 10 20 30 40 50 60 80 Track error [m] Velocity orthogonal to path 12 V orthogonal [m/s] ~ 01 TJ NPFG TJ NPFG BF Stripped -- TJ NPFG Cartesian V_approach min --- V_approach_minimum --- V_tk 10 20 30 40 50 60 70 80 Track error [m] Vector Field (Path = +Y direction, passing through origin) 15 10 0 -5

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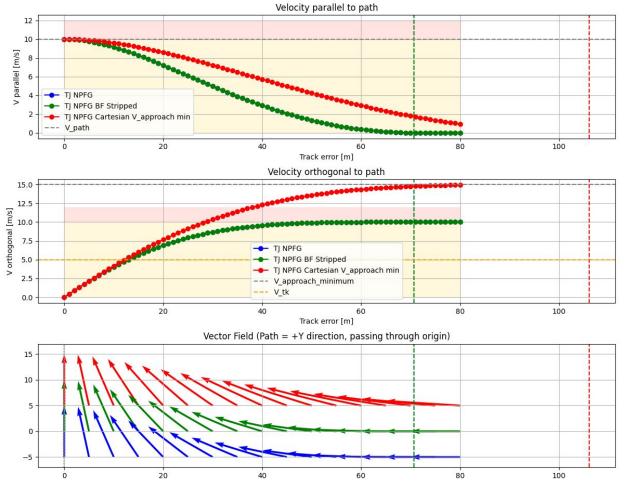
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Nominal Case (Again)

V_nom	10
V_path	10 (= V_nom, for fixed-wing)
V_approach_min	5 (lower than V_nom, won't affect)
V_ground	10 (= V_approach, arbitrarily match)

 $Vnom~10.0m/s,~Vmax~12.0m/s,~Vpath~10.0~m/s,~Vg=10.0m/s,~Vapproach_min=15.0m/s$



Approach Velocity increased

V_nom	10
V_path	10 (= V_nom, for fixed-wing)
V_approach_min	15

Vnom 10.0m/s, Vmax 12.0m/s, Vpath 10.0 m/s, Vg = 10.0m/s, Vapproach_min = 5.0m/s Velocity parallel to path 12 10 parallel [m/s] - TI NPFG → TJ NPFG BF Stripped TJ NPFG Cartesian V approach min 10 20 30 40 50 60 80 Track error [m] Velocity orthogonal to path 12 V orthogonal [m/s] ~ 01 TJ NPFG TJ NPFG BF Stripped -- TJ NPFG Cartesian V_approach min --- V_approach_minimum --- V_tk 10 20 30 40 50 60 70 80 Track error [m] Vector Field (Path = +Y direction, passing through origin) 15 10 0 -5

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Nominal Case (Again)

V_nom	10
V_path	10 (= V_nom, for fixed-wing)
V_approach_min	5 (lower than V_nom, won't affect)
V_ground	10 (= V_approach, arbitrarily match)

Vnom 10.0m/s, Vmax 12.0m/s, Vpath 10.0 m/s, Vg = 5.0m/s, Vapproach_min = 5.0m/s Velocity parallel to path 12 10 V parallel [m/s] -- TJ NPFG → TJ NPFG BF Stripped -- TJ NPFG Cartesian V approach min --- V path 10 20 30 50 60 80 Track error [m] Velocity orthogonal to path 12 V orthogonal [m/s] ~ 01 -- TJ NPFG TJ NPFG BF Stripped TJ NPFG Cartesian V_approach min --- V_approach_minimum --- V_tk 10 20 30 50 60 70 80 Track error [m] Vector Field (Path = +Y direction, passing through origin) 15 10 0 -5

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Ground Velocity reduced

V_nom	10
V_path	10 (= V_nom, for fixed-wing)
V_approach_min	10
V_ground	5

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