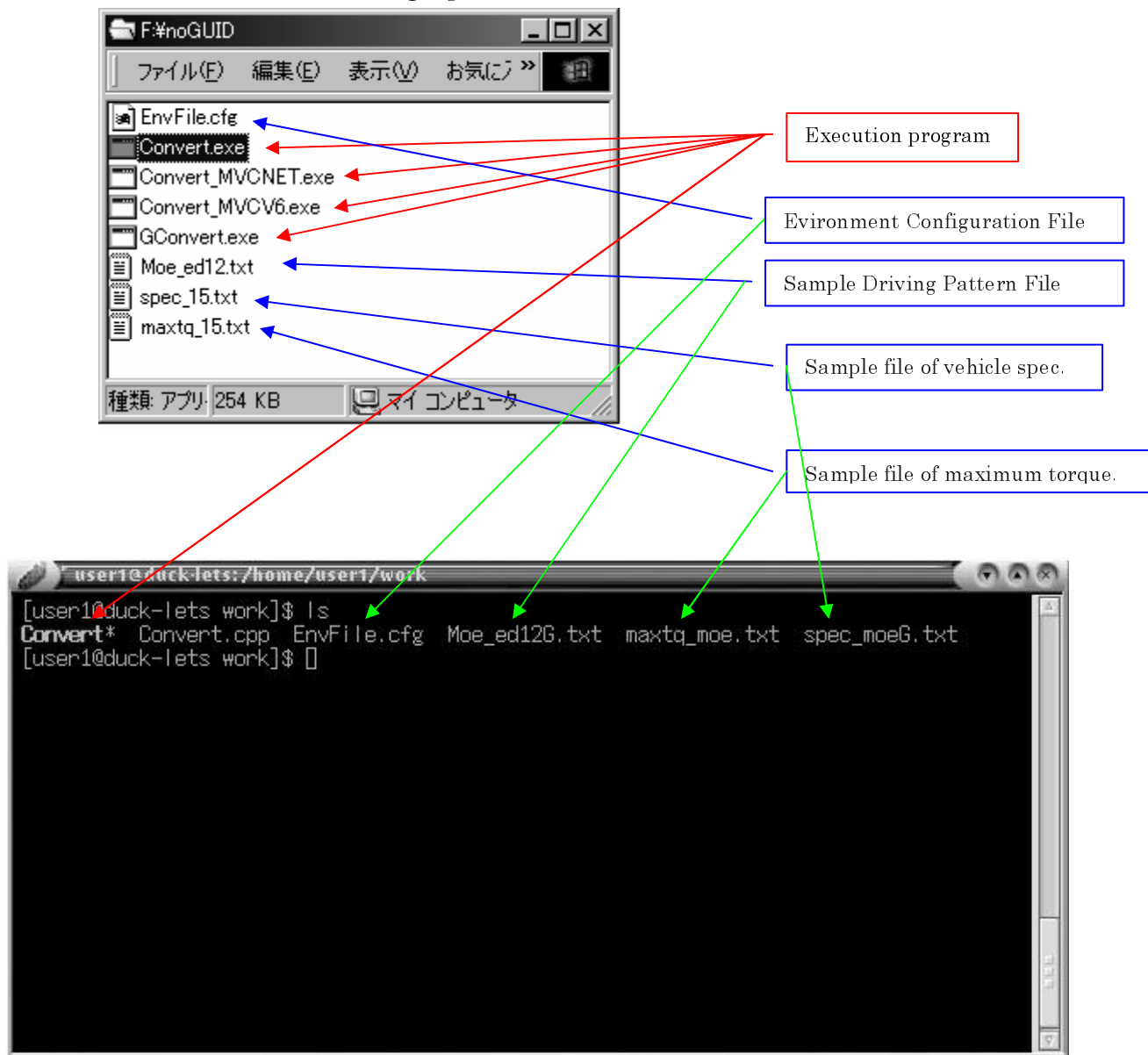


1. How to use

① Construction of conversion program



- Convert.exe :Borland; C++Builder, Version 5
- Convert_MVCV6.exe :Microsoft(R); Visual C++(R), Version 6*
- Convert_MVCNET.exe :Microsoft(R); Visual C++(R), Version Net*
- Gconvert :Win32. GNU C++*
- Convert : Unix/Linux/etc. GNU C++

*These executable files are not available.

② Editing of a vehicle specification, maximum engine torque and driving pattern.

How to edit refers 2.- 4.

Sample file vehicle specification data

:example) spec_15.txt

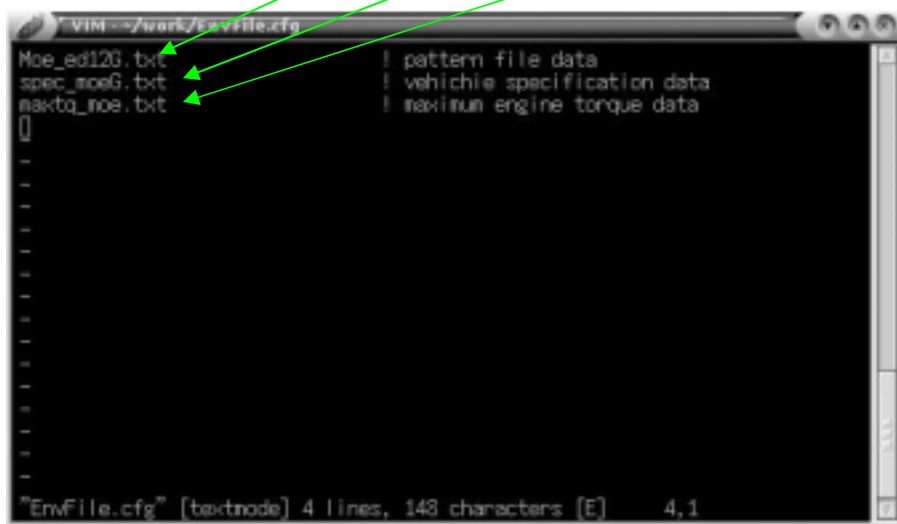
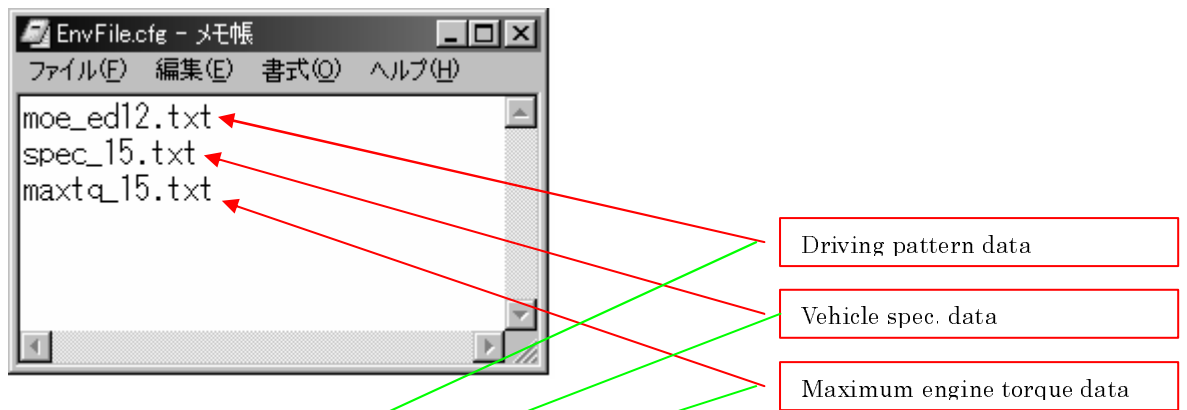
maximum engine torque data

:example) maxtq_15.txt

driving pattern data

:example) moe_ed12.txt

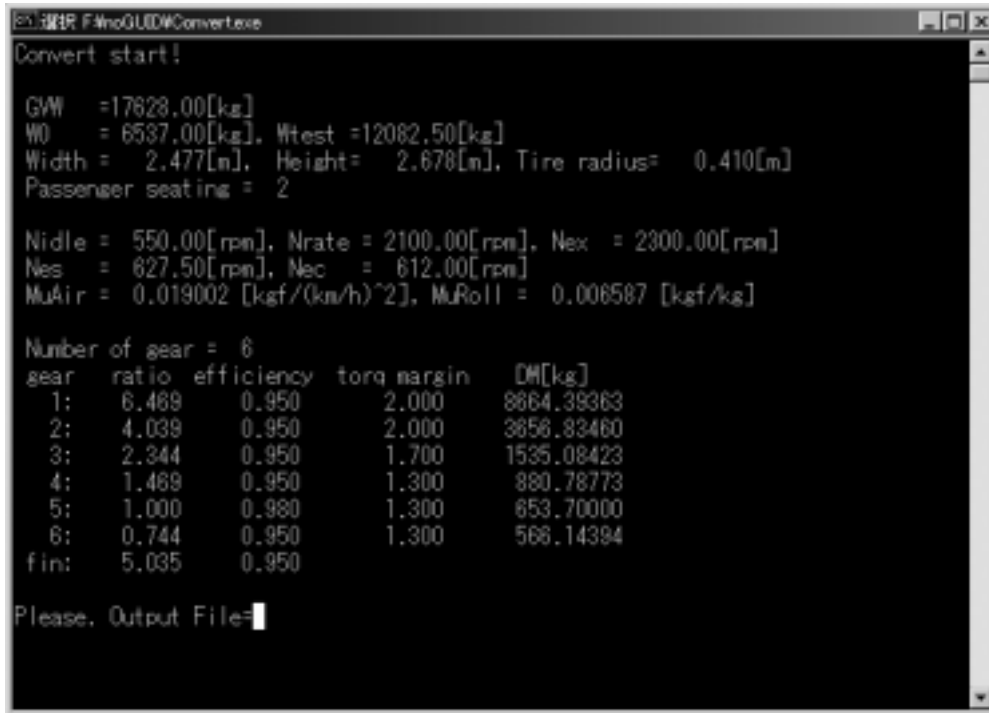
③ Describing of driving pattern data file and a vehicle specification file and a maximum engine torque data file in a "Envfile.cfg" file.



④ Double-click

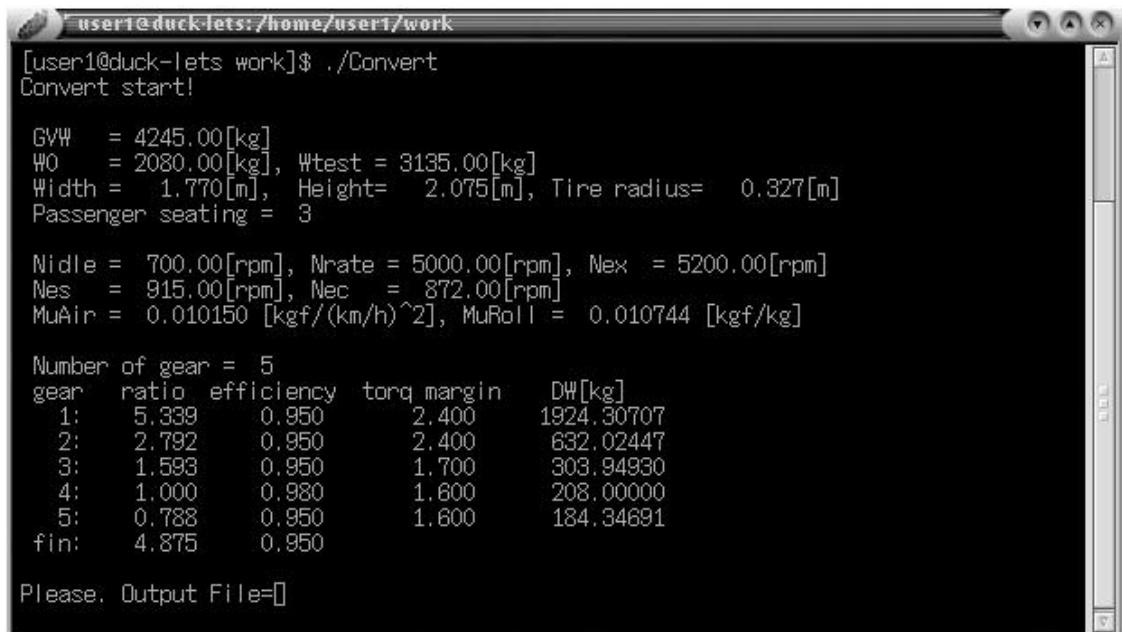
“Convert.exe”, “Convert_MVCV6.exe”, “Convert_MVCNET.exe”, “Gconvert.exe”, “Convert”, and then input the file names respectively.

Windows dos-prompt example.



```
Convert start!  
GVW = 17628.00[kg]  
W0 = 6537.00[kg], Wtest = 12082.50[kg]  
Width = 2.477[m], Height = 2.678[m], Tire radius = 0.410[m]  
Passenger seating = 2  
  
Nidle = 550.00[rpm], Nrate = 2100.00[rpm], Nex = 2300.00[rpm]  
Nes = 627.50[rpm], Nec = 612.00[rpm]  
MuAir = 0.019002 [kgf/(km/h)^2], MuRoll = 0.006587 [kgf/kg]  
  
Number of gear = 6  
gear ratio efficiency torq margin DW[kg]  
1: 6.469 0.950 2.000 8864.39363  
2: 4.039 0.950 2.000 3856.83460  
3: 2.344 0.950 1.700 1535.08423  
4: 1.469 0.950 1.300 880.78773  
5: 1.000 0.980 1.300 653.70000  
6: 0.744 0.950 1.300 568.14394  
fin: 5.035 0.950  
Please, Output File=
```

Unix/Linux/etc. prompt example.



```
[user1@duck-lets work]$ ./Convert  
Convert start!  
GVW = 4245.00[kg]  
W0 = 2080.00[kg], Wtest = 3135.00[kg]  
Width = 1.770[m], Height = 2.075[m], Tire radius = 0.327[m]  
Passenger seating = 3  
  
Nidle = 700.00[rpm], Nrate = 5000.00[rpm], Nex = 5200.00[rpm]  
Nes = 915.00[rpm], Nec = 872.00[rpm]  
MuAir = 0.010150 [kgf/(km/h)^2], MuRoll = 0.010744 [kgf/kg]  
  
Number of gear = 5  
gear ratio efficiency torq margin DW[kg]  
1: 5.339 0.950 2.400 1924.30707  
2: 2.792 0.950 2.400 832.02447  
3: 1.593 0.950 1.700 303.94930  
4: 1.000 0.980 1.600 208.00000  
5: 0.788 0.950 1.600 184.34691  
fin: 4.875 0.950  
Please, Output File=
```

The output data format refers 5.

2. Input data of vehicle spec.

3780	! curb vehicle mass (kg)
4000	! payload (kg)
2	! crew (persons)
2.469	! overall height (m)
2.230	! overall width (m)
0.465	! tire rolling radius (m)
6	! number of gear
8.064	! 1st gear ratio
5.443	! 2nd gear ratio
3.064	! 3rd gear ratio
1.824	! 4th gear ratio
1.321	! 5th gear ratio
1.000	! 6th gear ratio
4.444	! final gear ratio
600	! idling engine speed (rpm)
2700	! rated engine speed (rpm)
2900	! governed engine speed (rpm)

3. Input data of maximum engine torque

rev(rpm)	torque(Nm)
610	534
620	537
626	542
635	546
643	548
650	550
658	556
667	552
674	557
682	556
690	557
698	559
706	560
715	567
723	575
730	573
739	574
746	575
755	585
762	588

Number of data should be more than 5 points

4. Input data of driving pattern data

time	vel
0	0
1	0
2	0
3	0
4	0
5	0
6	0
7	0
8	0
9	0
10	0
11	0
12	0
13	0
14	0
15	0
16	0
17	0
18	0
19	0
20	0
21	0
22	0
23	0
24	0
25	4.19
26	8.32
27	12.33
28	16.05
29	18.74
30	20.28
31	21.48
32	23.13
33	25.17
34	27.19
35	28.97
36	30.43
37	31.46
38	32.24
39	33.16

5. Output data format

time(s)	Vtarget(km/h)	Vreal(km/h)	Ne(rpm)	Te(N-m)	N_norm(%)	T_norm(%)	Shift
0	0.00	0.00	600.0	0.0	0.00	0.00	0
1	0.00	0.00	600.0	0.0	0.00	0.00	0
2	0.00	0.00	600.0	0.0	0.00	0.00	0
3	0.00	0.00	600.0	0.0	0.00	0.00	0
4	0.00	0.00	600.0	0.0	0.00	0.00	0
5	0.00	0.00	600.0	0.0	0.00	0.00	0
6	0.00	0.00	600.0	0.0	0.00	0.00	0
7	0.00	0.00	600.0	0.0	0.00	0.00	0
8	0.00	0.00	600.0	0.0	0.00	0.00	0
9	0.00	0.00	600.0	0.0	0.00	0.00	0
10	0.00	0.00	600.0	0.0	0.00	0.00	0
11	0.00	0.00	600.0	0.0	0.00	0.00	0
12	0.00	0.00	600.0	0.0	0.00	0.00	0
13	0.00	0.00	600.0	0.0	0.00	0.00	0
14	0.00	0.00	600.0	0.0	0.00	0.00	0
15	0.00	0.00	600.0	0.0	0.00	0.00	0
16	0.00	0.00	600.0	0.0	0.00	0.00	0
17	0.00	0.00	600.0	0.0	0.00	0.00	0
18	0.00	0.00	600.0	0.0	0.00	0.00	0
19	0.00	0.00	600.0	0.0	0.00	0.00	0
20	0.00	0.00	600.0	0.0	0.00	0.00	0
21	0.00	0.00	600.0	0.0	0.00	0.00	0
22	0.00	0.00	600.0	0.0	0.00	0.00	0
23	0.00	0.00	600.0	0.0	0.00	0.00	0
24	0.00	0.00	600.0	0.0	0.00	0.00	0
25	4.19	4.19	705.0	244.4	5.00	43.67	2
26	8.32	8.32	1148.6	241.3	26.12	31.83	2
27	12.33	12.33	958.2	320.4	17.06	49.16	3
28	16.05	16.05	1247.3	299.2	30.82	38.65	3
29	18.74	18.74	1456.3	222.2	40.78	27.64	3
30	20.28	20.28	1576.0	135.9	46.48	17.06	3
31	21.48	21.48	1669.3	110.6	50.92	14.22	3

note) Vtarget : target speed

Vreal : real speed

Ne : engine speed

Te : engine torque

n_norm : normalized engine speed = (engine speed - idling engine speed) / (rated engine speed - idling engine speed)

T_norm : normalized engine torque = engine torque / maximum engine torque