

Table S1. List of all variables recorded automatically in the JDLink server for harvesters and forwarders.

No.	Variable	Unit	Harvester	Forwarder
1.	Used fuel	l	x	x
2.	TimberMatic version	-	x	x
3.	Fuel level	%	x	x
4.	Harvested volume – fuelwood	m ³	x	-
5.	Harvested volume – multi-tree-handling	m ³	x	-
6.	Harvested volume – standard	m ³	x	-
7.	Driving distance – high gear	km	x	x
8.	Driving distance – low gear	km	x	x
9.	Average fuel use per harvested volume - standard	l/m ³	x	-
10.	Average fuel use per harvested volume – multi-tree-handling	l/m ³	x	-
11.	Average fuel use per harvested volume - fuelwood	l/m ³	x	-
12.	Engine utilization – key-off	h	x	x
13.	Engine utilization – idle	h	x	x
14.	Engine utilization – low	h	x	x
15.	Engine utilization – medium	h	x	x
16.	Engine utilization – high	h	x	x
17.	Last level of soot in the filter	-	x	x
18.	Work time composition – gripping	h	x	-
19.	Work time composition –processing	h	x	-
20.	Work time composition – other	h	x	-
21.	Engine fuel usage – key-on	l	x	x
22.	Engine fuel usage – idle	l	x	x
23.	Engine fuel usage – low	l	x	x
24.	Engine fuel usage – medium	l	x	x
25.	Engine fuel usage – high	l	x	x
26.	DEF fluid level	%	x	x
27.	Fuel consumption composition – gripping	l	x	-
28.	Fuel consumption composition – processing	l	x	-
29.	Fuel consumption composition – other	l	x	-
30.	Interrupted filter cleaning	count	x	x
31.	Machine utilization – engine-off	h	x	x
32.	Machine utilization – idle low revolutions	h	x	-
33.	Machine utilization – idle high revolutions	h	x	-
34.	Machine utilization – work low revolutions	h	x	-
35.	Machine utilization – work high revolutions	h	x	-
36.	Time with soot level – low level (0)	h	x	x
37.	Time with soot level – low level (1)	h	x	x
38.	Time with soot level – medium level (2)	h	x	x
39.	Time with soot level – high level (3)	h	x	x
40.	Time with soot level – very high level (4)	h	x	x
41.	Time with soot level – separator operation	h	x	x
42.	Productivity	m ³ /h	x	-
43.	Number of trees cut - standard		x	-
44.	Number of trees cut – multi-tree-handling		x	-
45.	Number of trees cut - fuelwood		x	-
46.	Maximum hydraulic oil temperature	°C	x	x
47.	Mileage	m	x	x

48.	Average fuel consumption	l/h	x	x
49.	Completed filter cleaning	count	x	x
50.	Average tree volume - standard	m ³	x	-
51.	Number of grips - unloading		-	x
52.	Number of grips - loading		-	x
53.	Fuel consumption composition – driving empty	l	-	x
54.	Fuel consumption composition – loading	l	-	x
55.	Fuel consumption composition – driving loaded	l	-	x
56.	Fuel consumption composition – unloading	l	-	x
57.	Fuel consumption composition – driving on the road	l	-	x
58.	Average cycle time - unloading	sec.	-	x
59.	Average cycle time - loading	sec.	-	x
60.	Work time composition – driving empty	h	-	x
61.	Work time composition – loading	h	-	x
62.	Work time composition – driving loaded	h	-	x
63.	Work time composition – unloading	h	-	x
64.	Work time composition – driving on the road	h	-	x
65.	Machine utilization – driving	h	-	x
66.	Machine utilization – crane work	h	-	x
67.	Machine utilization – driving and crane	h	-	x
68.	Machine utilization – idle	h	-	x