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LAMPIRAN

Lampiran 1 Hasil Deteksi dan Pemetaan Jalan berlubang

Name	Accel	Latitude	Longitude	Timestamp
20220204_092409	-7.0874605	-5.2140457	119.493608	Feb 4, 2022 09:24:09
20220204_092421	-1.4633543	-5.2140457	119.493608	Feb 4, 2022 09:24:21
20220204_092427	-10.625296	-5.2140457	119.493608	Feb 4, 2022 09:24:27
20220204_093946	-1.3428679	-5.148295	119.4299983	Feb 4, 2022 09:39:46
20220204_094015	-14.780538	-5.148295	119.4299983	Feb 4, 2022 09:40:15
20220204_094044	-3.534148	-5.148295	119.4299983	Feb 4, 2022 09:40:44
20220204_094825	-2.3836756	-5.148295	119.4299983	Feb 4, 2022 09:48:25
20220204_095129	-0.43385002	-5.148295	119.4299983	Feb 4, 2022 09:51:29
20220204_095301	-0.348894	-5.148295	119.4299983	Feb 4, 2022 09:53:01
20220204_100453	-5.1824284	-5.148295	119.4299983	Feb 4, 2022 10:04:53
20220204_100515	-16.46257	-5.148295	119.4299983	Feb 4, 2022 10:05:15
20220204_101723	-6.8090954	-5.148295	119.4299983	Feb 4, 2022 10:17:23
20220204_104316	-1.2721987	-5.148295	119.4299983	Feb 4, 2022 10:43:16
20220204_122300	-2.5254931	-5.1717621	119.4320943	Feb 4, 2022 12:23:00
20220205_075650	-0.9777179	-5.1729248	119.4536973	Feb 5, 2022 07:56:50
20220205_085253	-1.5825055	-5.14367	119.4247667	Feb 5, 2022 08:52:53
20220205_085254	-11.163588	-5.14367	119.4247667	Feb 5, 2022 08:52:54
20220205_085255	-5.6679883	-5.14367	119.4247667	Feb 5, 2022 08:52:55

20220205_101841	-0.46220458	-5.1569764	119.4235529	Feb 5, 2022 10:18:41
20220205_101952	-0.2679143	-5.1569764	119.4235529	Feb 5, 2022 10:19:52
20220218_163122	-4.1345196	-5.1533109	119.4181137	Feb 18, 2022 16:31:22
20220218_164953	-2.0797815	-5.131065	119.419202	Feb 18, 2022 16:49:53
20220224_080640	-9.31105	-5.1357005	119.4358881	Feb 24, 2022 08:06:40
20220224_080644	-1.528405	-5.1357005	119.4358881	Feb 24, 2022 08:06:44
20220224_080646	-2.8282003	-5.1357005	119.4358881	Feb 24, 2022 08:06:46
20220224_080940	-4.816982	-5.1359521	119.4366136	Feb 24, 2022 08:09:40
20220224_080943	-1.7488837	-5.1359521	119.4366136	Feb 24, 2022 08:09:43
20220224_080951	-0.6941004	-5.1359521	119.4366136	Feb 24, 2022 08:09:51
20220224_081136	-0.040519357	-5.1357005	119.4358881	Feb 24, 2022 08:11:36
20220224_081751	-7.420175	-5.1357005	119.4358881	Feb 24, 2022 08:17:51
20220224_081800	-2.7400637	-5.1357005	119.4358881	Feb 24, 2022 08:18:00
20220224_081801	-1.9955347	-5.1357005	119.4358881	Feb 24, 2022 08:18:01
20220224_091030	-18.307878	-5.1494312	119.4264571	Feb 24, 2022 09:10:30
20220224_091139	-1.8827167	-5.1494312	119.4264571	Feb 24, 2022 09:11:39
20220224_091302	-19.964317	-5.1489279	119.4250061	Feb 24, 2022 09:13:02
20220224_092704	-0.19942951	-5.1551137	119.4166626	Feb 24, 2022 09:27:04
20220224_092715	-13.921327	-5.1551137	119.4166626	Feb 24, 2022 09:27:15
20220224_093445	-0.16951942	-5.1453457	119.4217413	Feb 24, 2022 09:34:45
20220224_093458	-4.0362115	-5.1421938	119.4213785	Feb 24, 2022 09:34:58

20220224_094239	-2.0751157	-5.1342163	119.4195647	Feb 24, 2022 09:42:39
20220225_091309	-3.7473688	-5.1691698	119.4351627	Feb 25, 2022 09:13:09
20220225_091310	-9.940665	-5.1691698	119.4351627	Feb 25, 2022 09:13:10
20220225_091707	-2.8612764	-5.1699613	119.4366136	Feb 25, 2022 09:17:07
20220225_091732	-6.9094877	-5.1699429	119.4369763	Feb 25, 2022 09:17:32
20220225_094612	-5.5715117	-5.1569166	119.4152115	Feb 25, 2022 09:46:12
20220225_094613	-2.0834596	-5.1569166	119.4152115	Feb 25, 2022 09:46:13
20220225_094614	-5.62237	-5.1569166	119.4152115	Feb 25, 2022 09:46:14
20220225_094618	-11.316941	-5.1569166	119.4152115	Feb 25, 2022 09:46:18
20220225_095727	-0.9817703	-5.1342163	119.4195647	Feb 25, 2022 09:57:27

Lampiran 2 Hasil Uji Coba Speed pada Sistem

Pengujian	Z-Thresh	kecepatan	Lokasi (Jalan)
C-01	$0 < Z_{th} \leq 5$	≤ 35 km/jam	Pendidikan 1
C-02	$0 < Z_{th} \leq 5$	≤ 35 km/jam	Pendidikan 2
C-03	$0 < Z_{th} \leq 5$	≤ 35 km/jam	Pendidikan 3
C-04	$0 < Z_{th} \leq 5$	> 35 km/jam	Pendidikan 1
C-05	$0 < Z_{th} \leq 5$	> 35 km/jam	Pendidikan 2
C-06	$0 < Z_{th} \leq 5$	> 35 km/jam	Pendidikan 3
C-07	$-5 < Z_{th} \leq 0$	≤ 35 km/jam	Pendidikan 1
C-08	$-5 < Z_{th} \leq 0$	≤ 35 km/jam	Pendidikan 2
C-09	$-5 < Z_{th} \leq 0$	≤ 35 km/jam	Pendidikan 3
C-10	$-5 < Z_{th} \leq 0$	> 35 km/jam	Pendidikan 1
C-11	$-5 < Z_{th} \leq 0$	> 35 km/jam	Pendidikan 2
C-12	$-5 < Z_{th} \leq 0$	> 35 km/jam	Pendidikan 3
C-13	≤ -5	≤ 35 km/jam	Pendidikan 1
C-14	≤ -5	≤ 35 km/jam	Pendidikan 2
C-15	≤ -5	≤ 35 km/jam	Pendidikan 3

C-16	≤ -5	> 35 km/jam	Pendidikan 1
C-17	≤ -5	> 35 km/jam	Pendidikan 2
C-18	≤ -5	> 35 km/jam	Pendidikan 3

Pengujian	<i>True Positive</i>	<i>False Positive</i>	<i>False Negative</i>	Presisi	<i>Recall</i>	<i>F1-Score</i>	Average
C-01	5	5	0	50.00%	100.00%	66.67%	
C-02	5	2	0	71.43%	100.00%	83.33%	77.78%
C-03	5	2	0	71.43%	100.00%	83.33%	
C-04	3	4	0	42.86%	100.00%	60.00%	
C-05	3	1	0	75.00%	100.00%	85.71%	77.14%
C-06	3	1	0	75.00%	100.00%	85.71%	
C-07	5	0	0	100.00%	100.00%	100.00%	
C-08	4	1	1	80.00%	80.00%	80.00%	89.63%
C-09	4	0	1	100.00%	80.00%	88.89%	
C-10	3	1	0	75.00%	100.00%	85.71%	
C-11	3	1	0	75.00%	100.00%	85.71%	70.48%
C-12	1	1	2	50.00%	33.33%	40.00%	
C-13	3	0	2	100.00%	60.00%	75.00%	
C-14	3	1	2	75.00%	60.00%	66.67%	47.22%
C-15	4	0	1	0.00%	80.00%	0.00%	
C-16	2	0	1	100.00%	66.67%	80.00%	
C-17	1	1	2	50.00%	33.33%	40.00%	40.00%
C-18	0	1	3	0.00%	0.00%	0.00%	

Nama	Accel	Timestamp	Latitude	Longitude	Speed (m/s)
20220607_073836	-9.282006	Jun 7, 2022 07:38:36	-5.2301645	119.4946371	5.0640182
20220607_074038	-0.39342165	Jun 7, 2022 07:40:38	-5.1693043	119.435212	7.365882
20220607_074145	-7.2840257	Jun 7, 2022 07:41:45	-5.1691901	119.4355916	6.522455
20220607_074238	-12.2261915	Jun 7, 2022 07:42:38	-5.1691901	119.4355916	7.375581
20220607_074318	-0.5127239	Jun 7, 2022 07:43:18	-5.1691515	119.4355254	5.014525
20220607_074446	-3.7120085	Jun 7, 2022 07:44:46	-5.1699613	119.4366136	6.9317193
20220607_074533	-8.84971	Jun 7, 2022 07:45:33	-5.1699613	119.4366136	7.375326
20220607_074656	-0.5159179	Jun 7, 2022 07:46:56	-5.1696546	119.4369763	13.870096
20220607_074658	-3.9370503	Jun 7, 2022 07:46:58	-5.1696546	119.4369763	13.870096

20220607_074708	-1.4241395	Jun 7, 2022 07:47:08	-5.1678018	119.4337118	8.357427
20220611_065436	-0.30883837	Jun 11, 2022 06:54:36	-5.1691698	119.4351627	7.375326
20220611_065600	-30.544504	Jun 11, 2022 06:56:00	-5.1678018	119.4337118	7.375326
20220611_065618	-0.31311864	Jun 11, 2022 06:56:18	-5.1678018	119.4337118	13.870096
20220611_065910	-3.643169	Jun 11, 2022 06:59:10	-5.1696546	119.4369763	7.2822385
20220611_070121	-6.1537557	Jun 11, 2022 07:01:21	-5.1705196	119.4369763	7.2822385
20220611_070237	-3.2180095	Jun 11, 2022 07:02:37	-5.1691331	119.4358881	4.7140346
20220611_070400	-0.007007122	Jun 11, 2022 07:04:00	-5.1691331	119.4358881	11.737422
20220611_070440	-6.3094196	Jun 11, 2022 07:04:40	-5.16836	119.4340745	11.737422
20220611_070612	-2.1245291	Jun 11, 2022 07:06:12	-5.1691698	119.4351627	6.9317193
20220611_070614	-0.6793299	Jun 11, 2022 07:06:14	-5.1691698	119.4351627	6.9317193

Lampiran 3 Kedalaman Lubang







Lampiran 4 Lebar Lubang

1. 42 cm



2. 98 cm



3. 100 cm



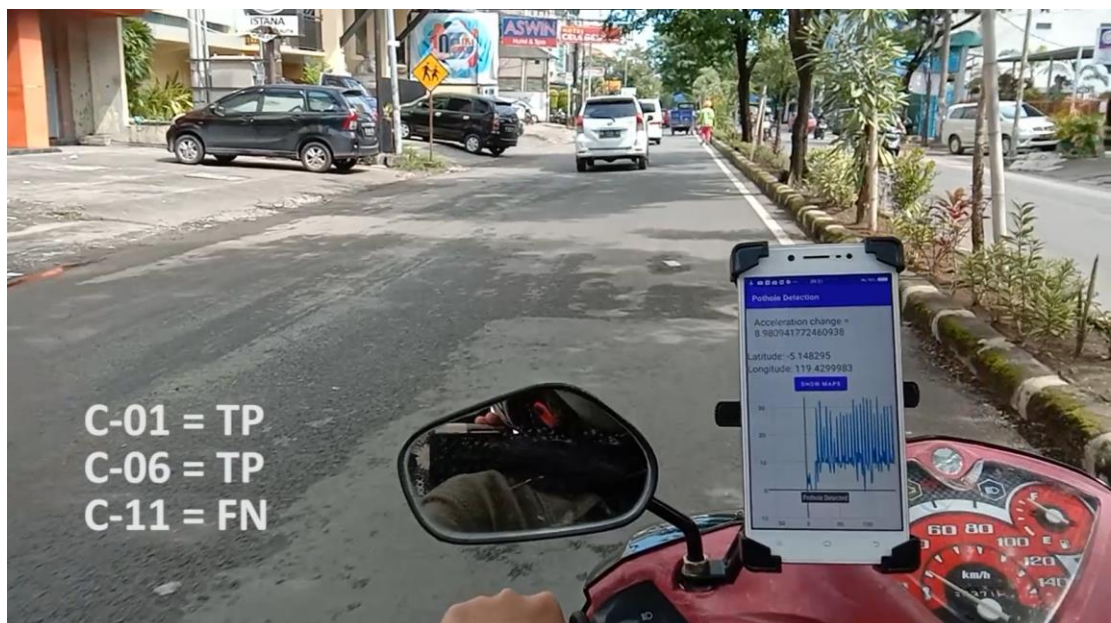
Lampiran 5 Validasi Data

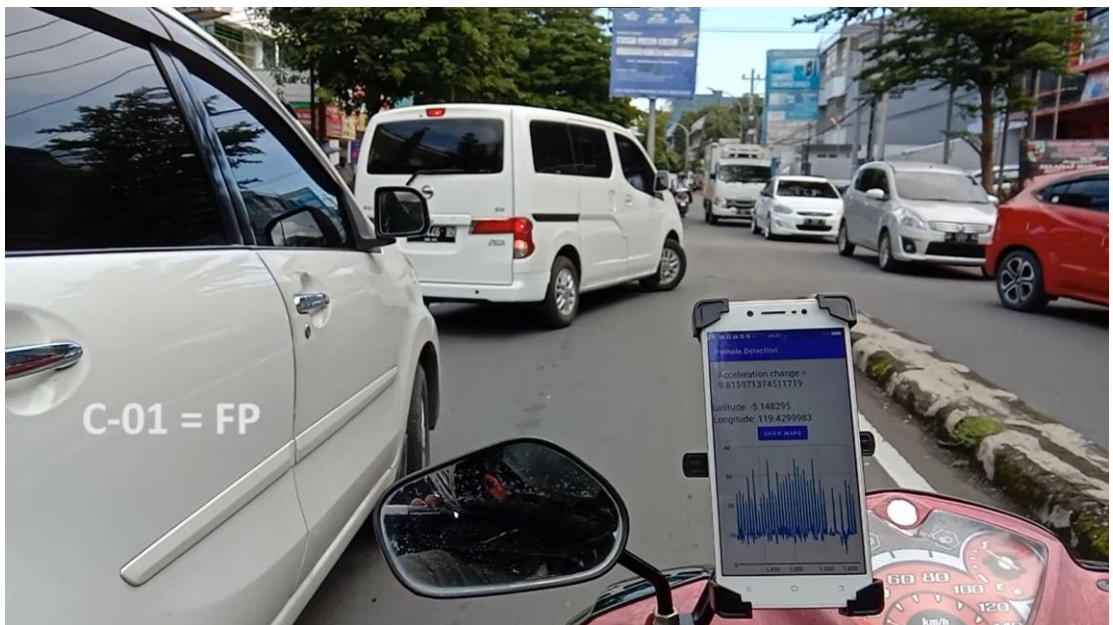
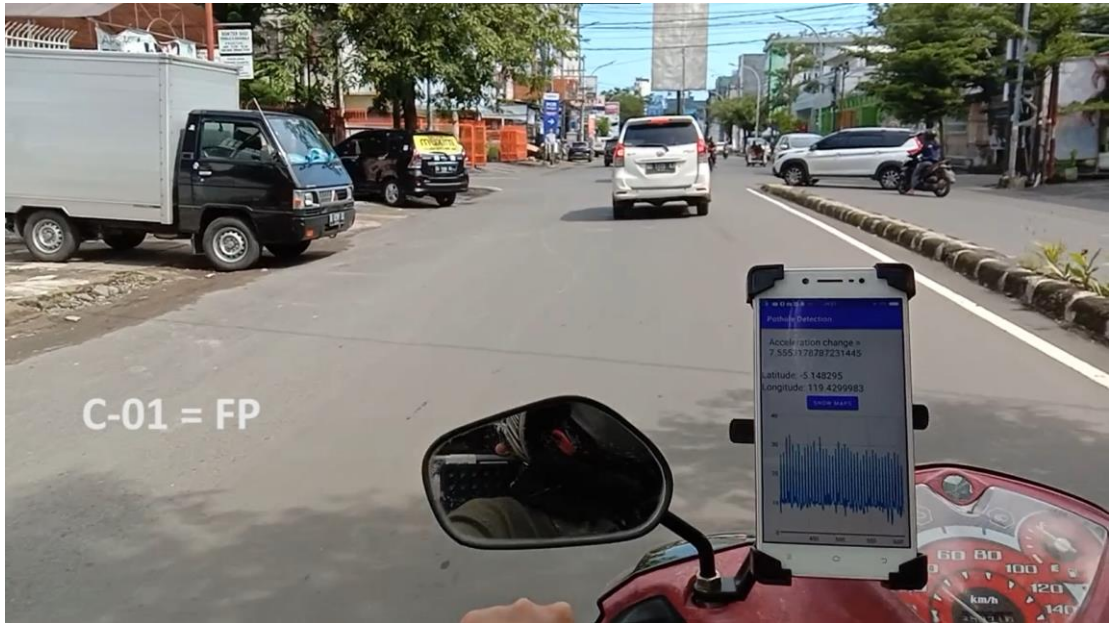
Keterangan:

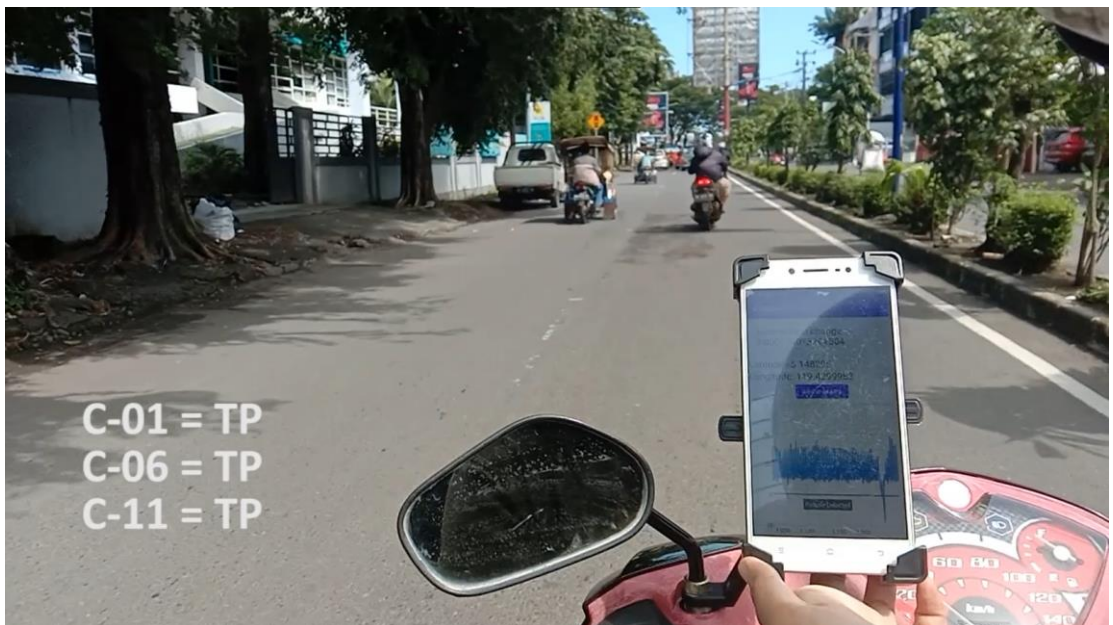
TP = ada lubang, terdeteksi benar lubang

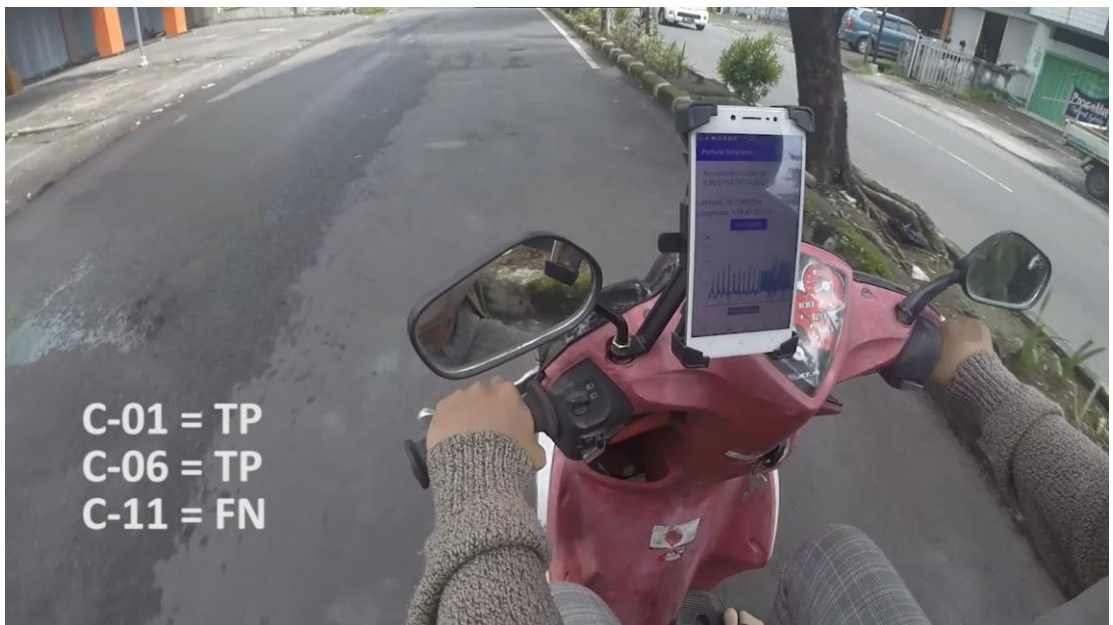
FP = tidak ada Lubang, terdeteksi lubang

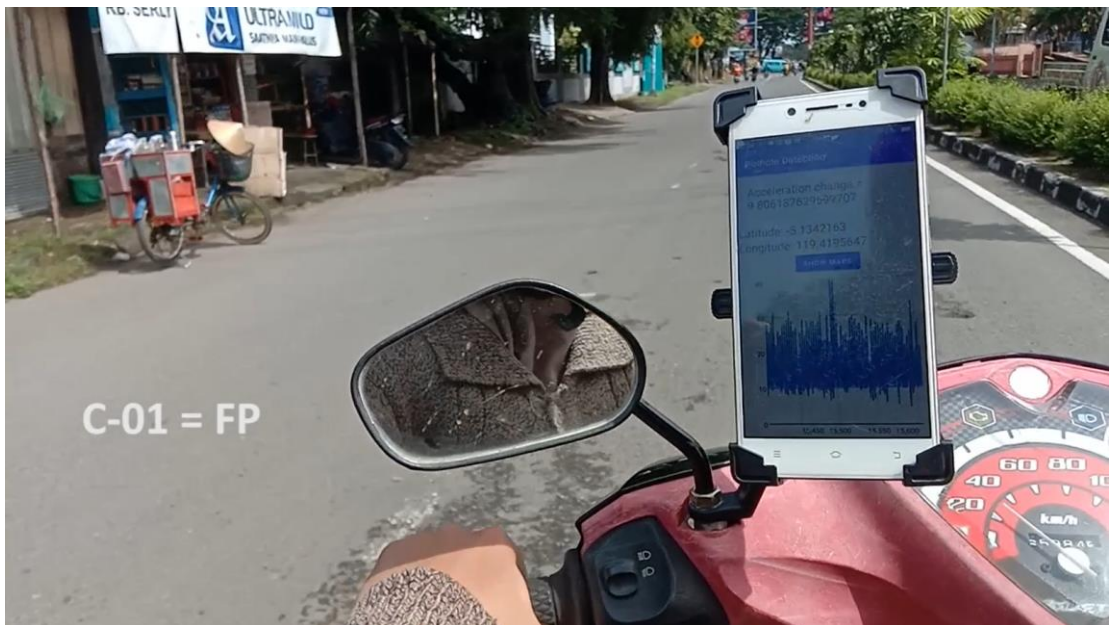
FN = ada Lubang, tidak terdeteksi lubang

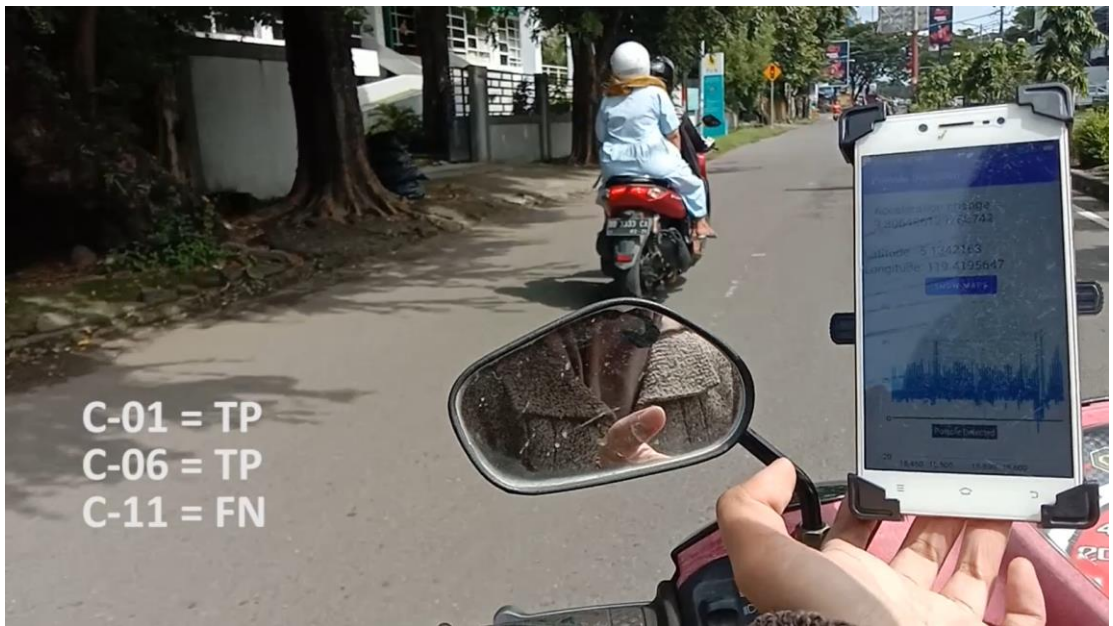


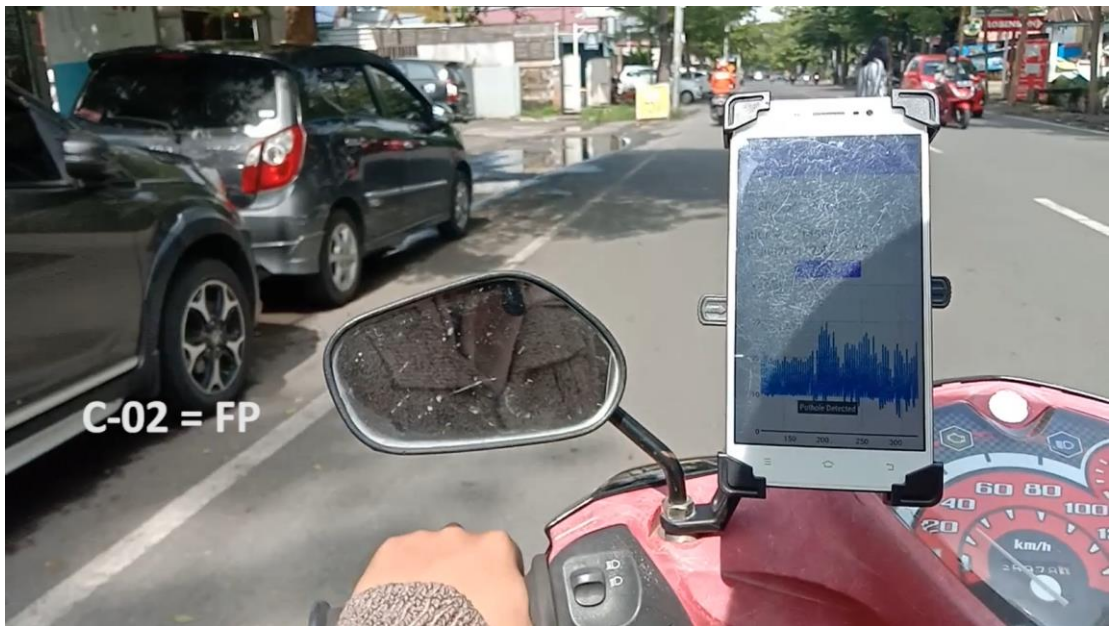




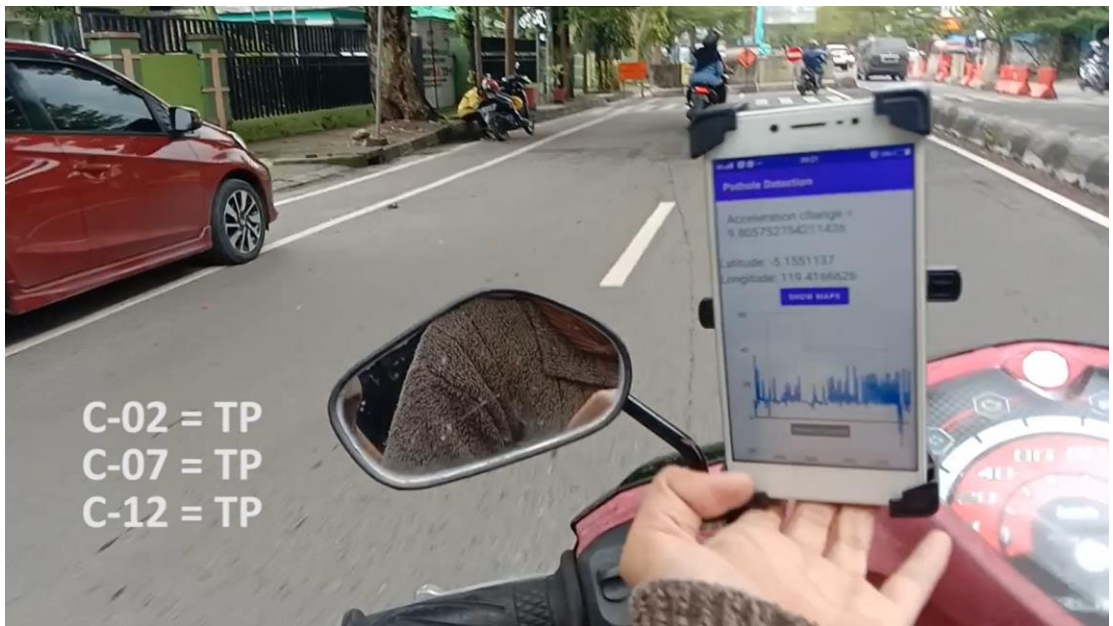


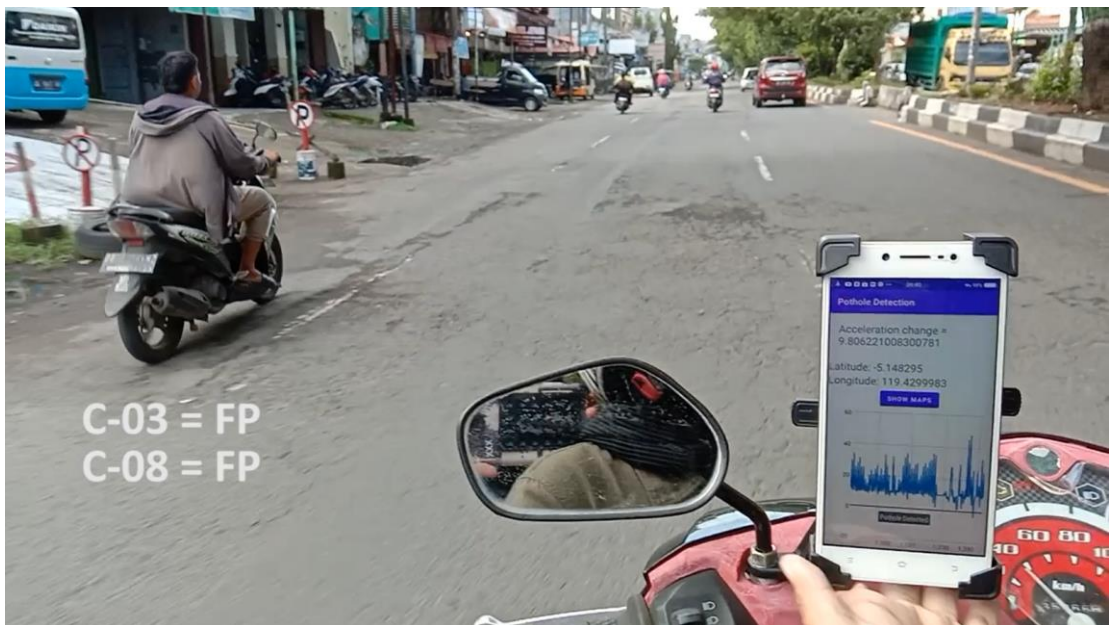




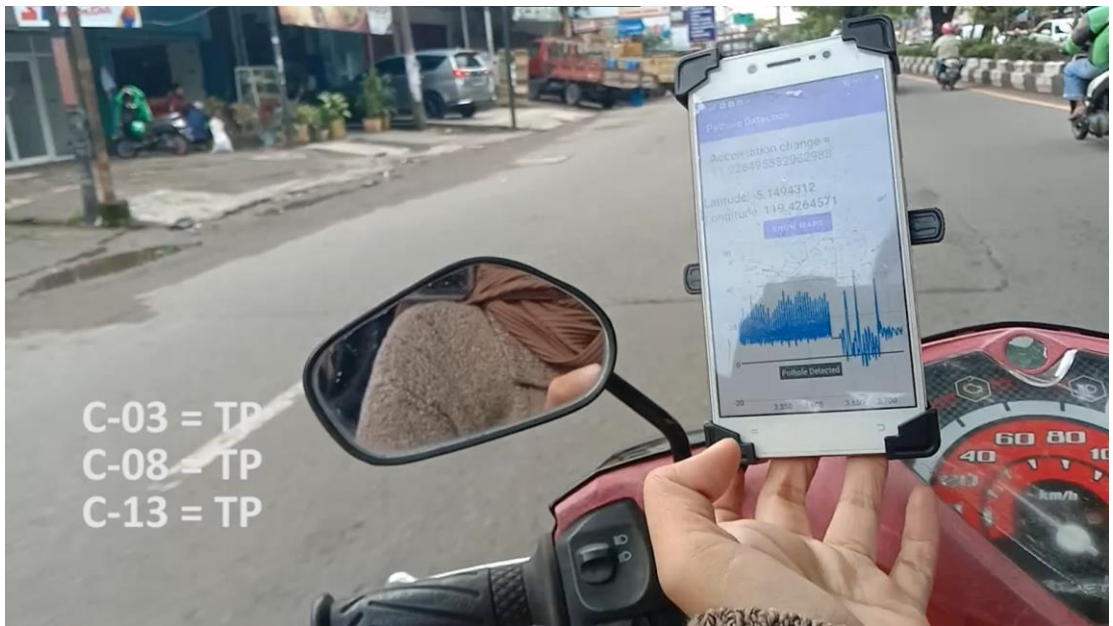


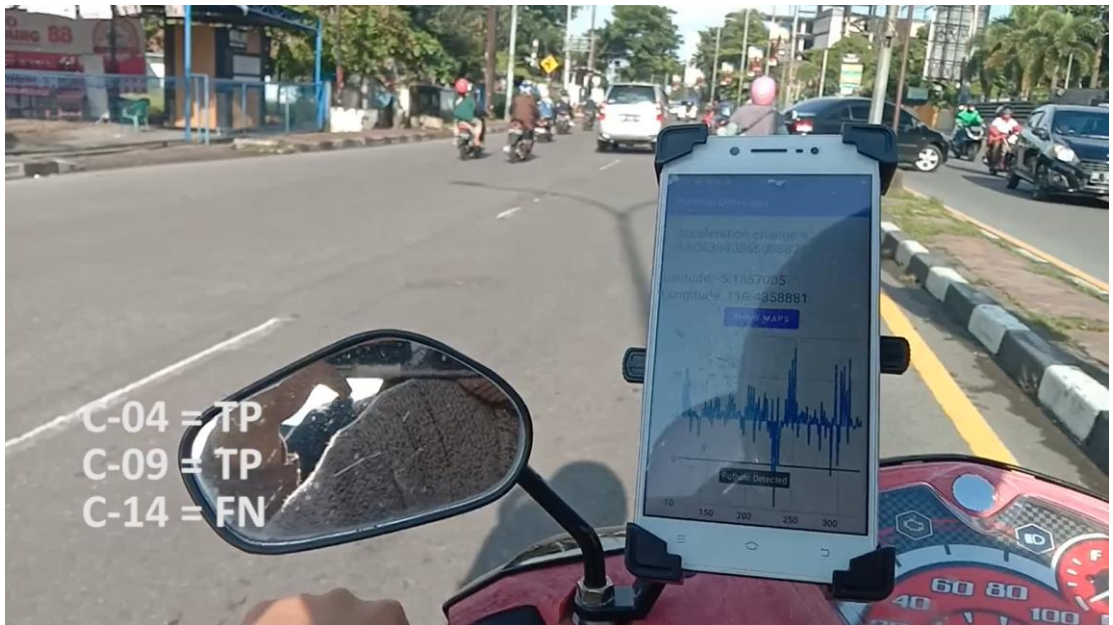


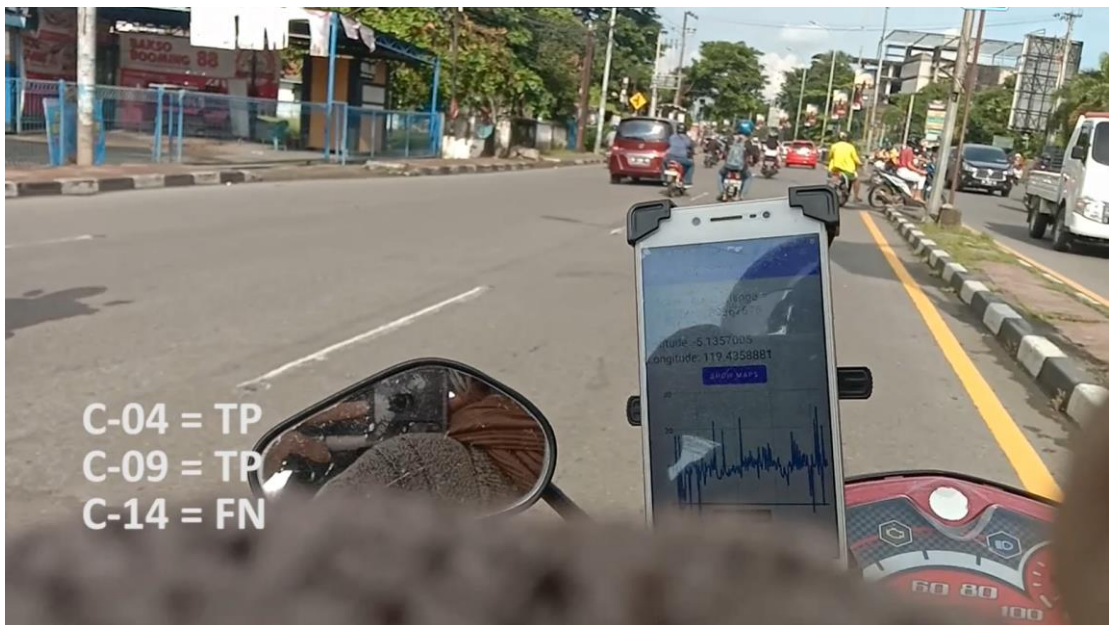


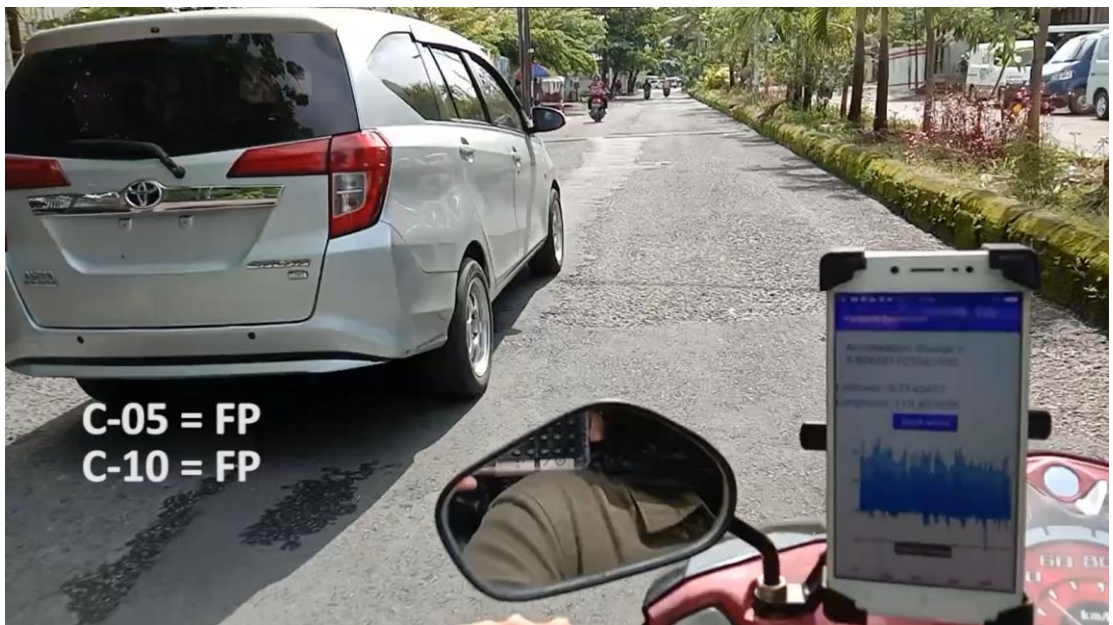


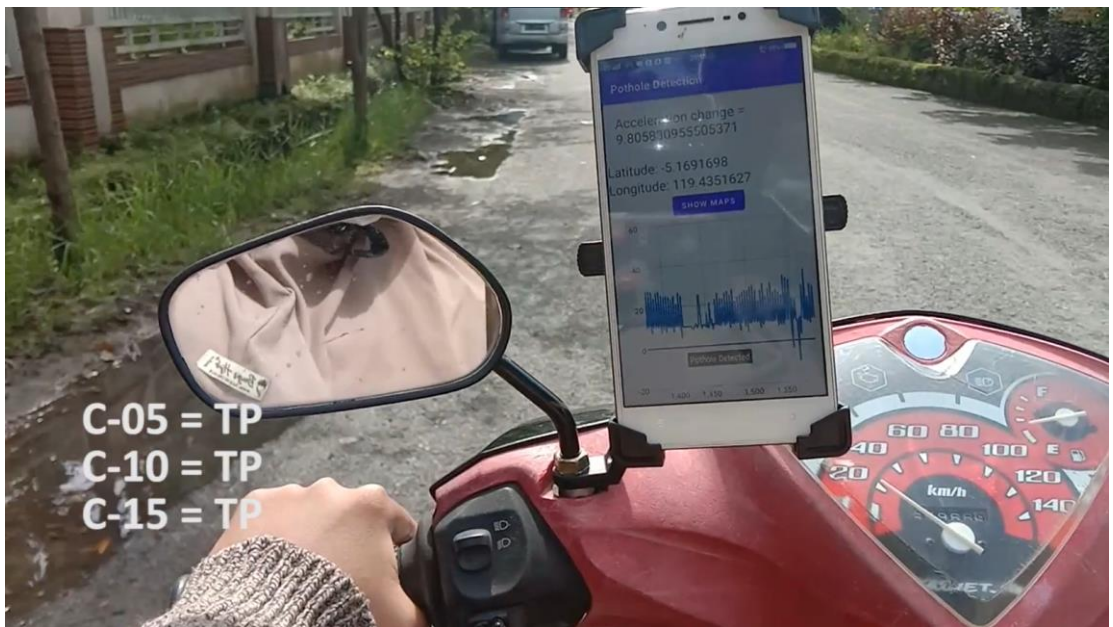
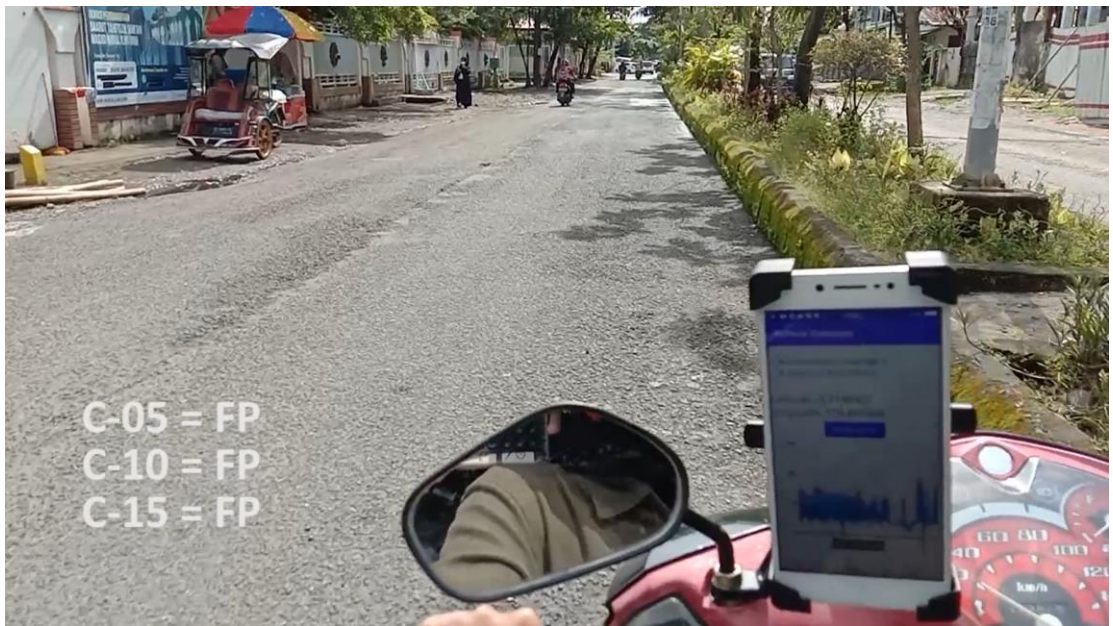


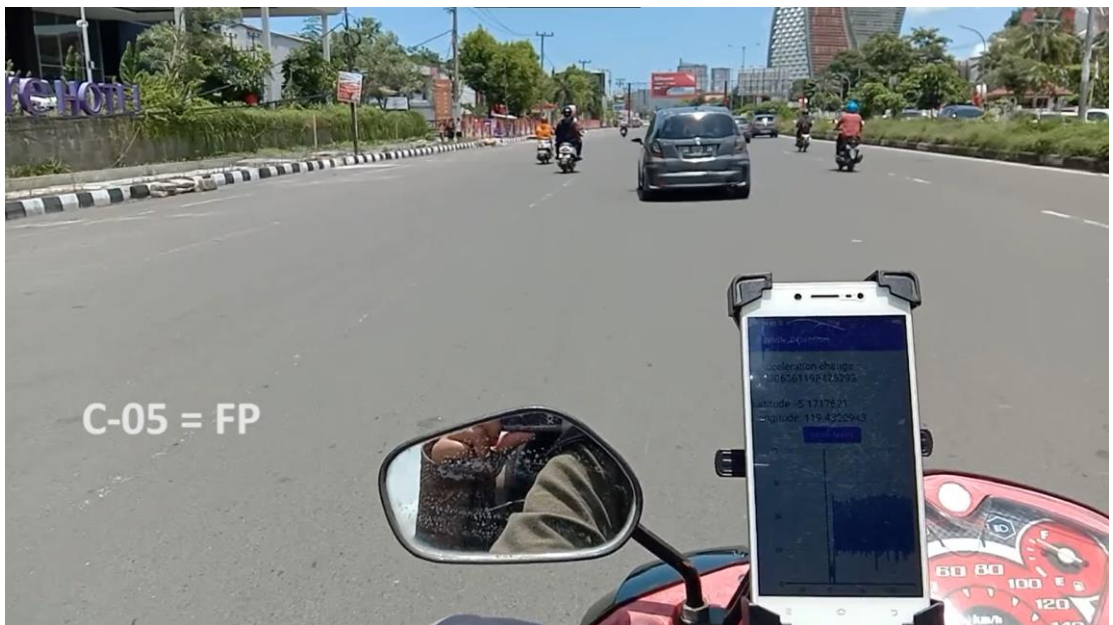


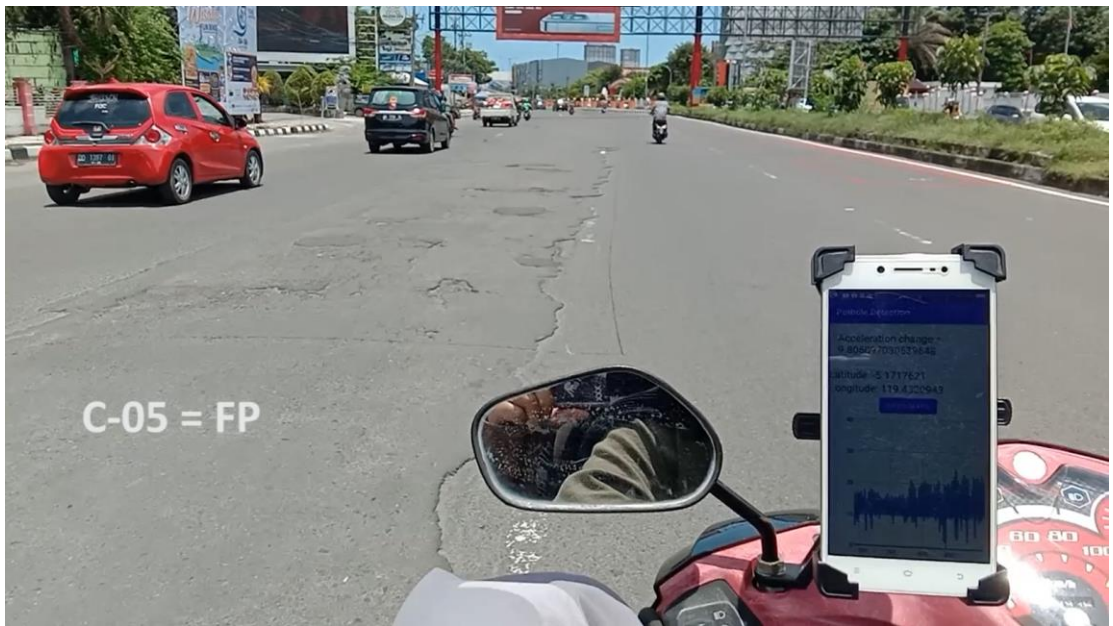


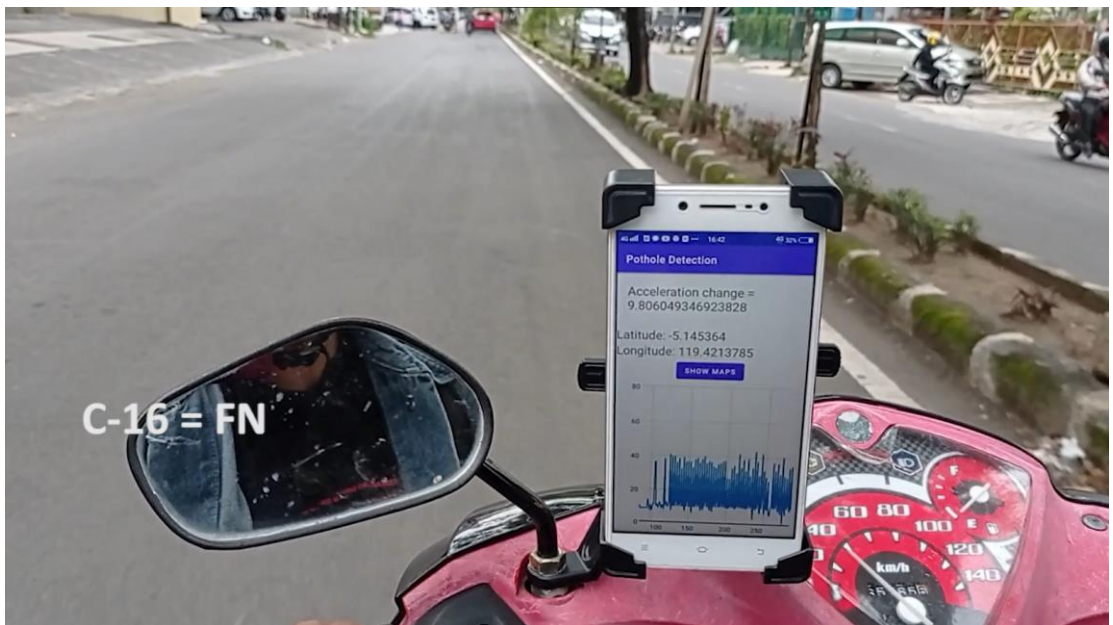








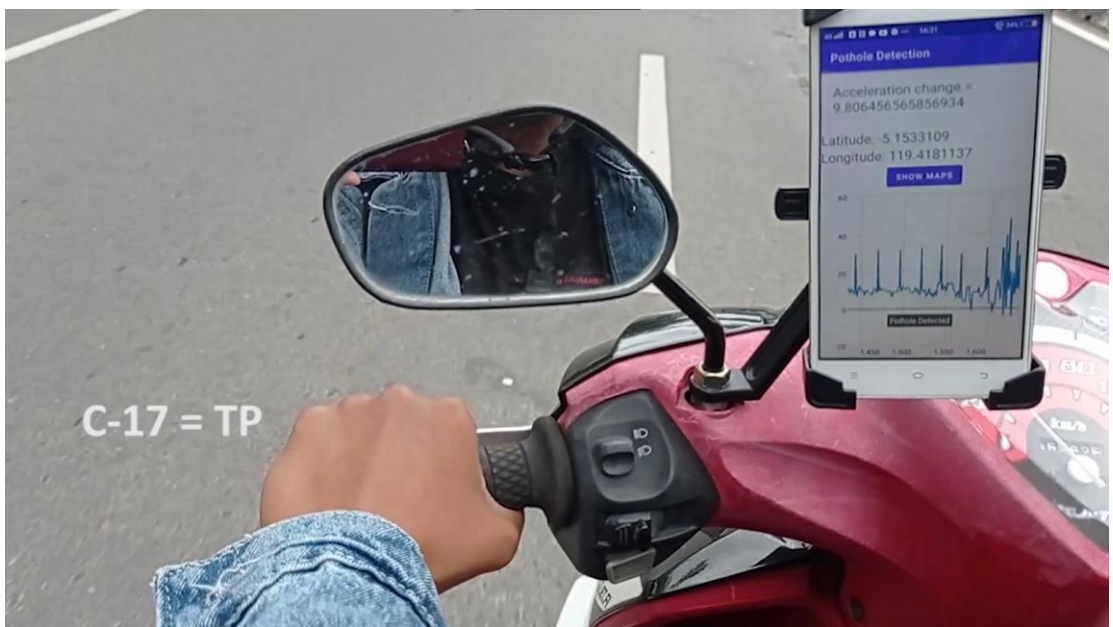




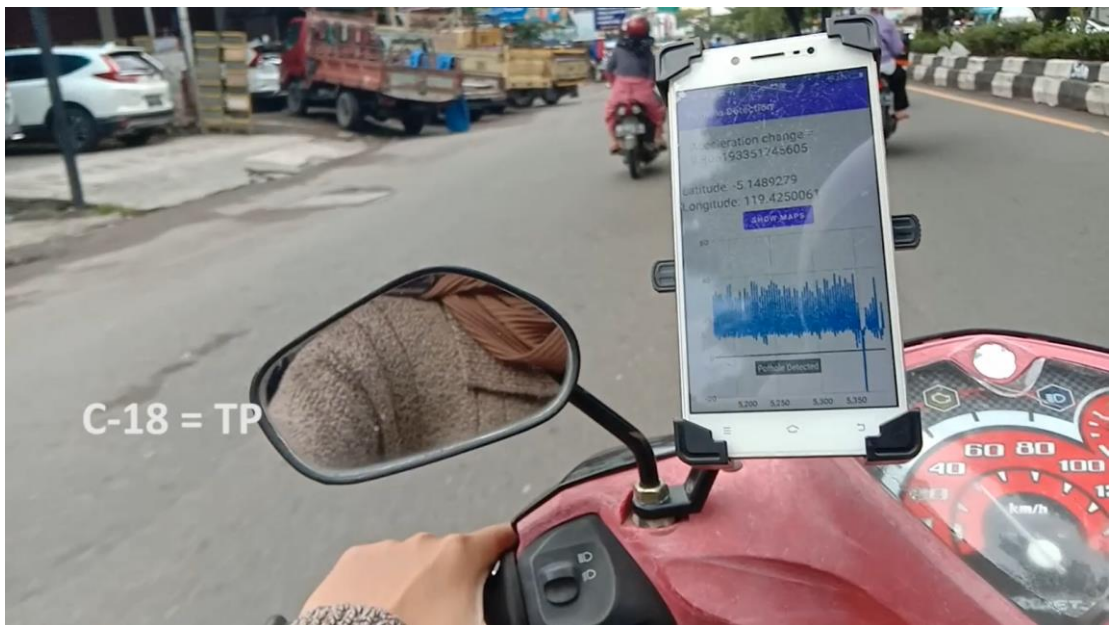
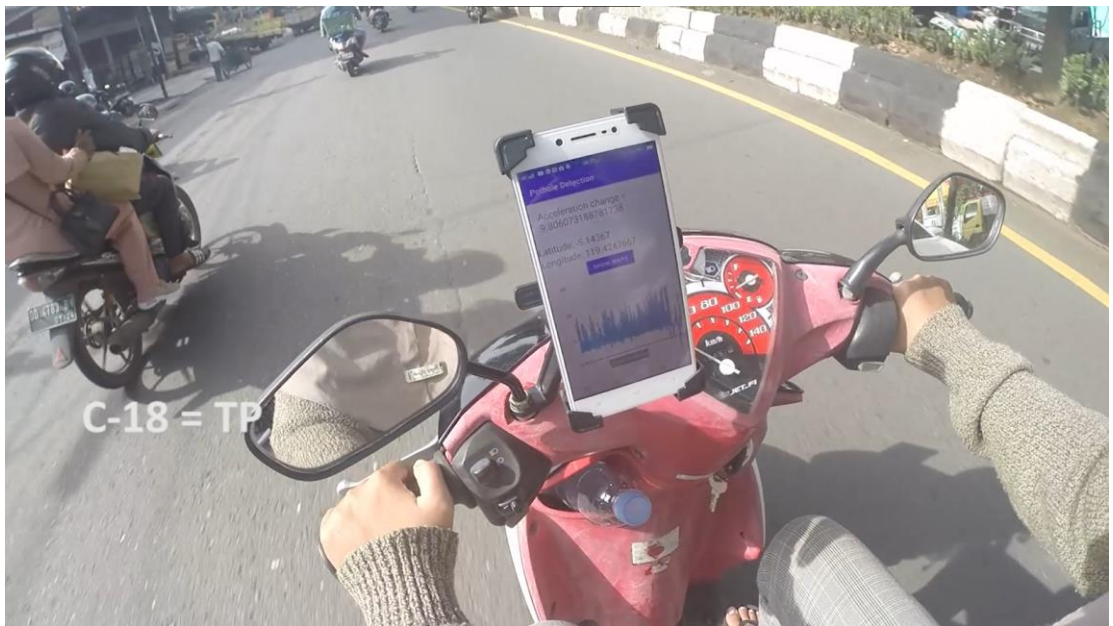










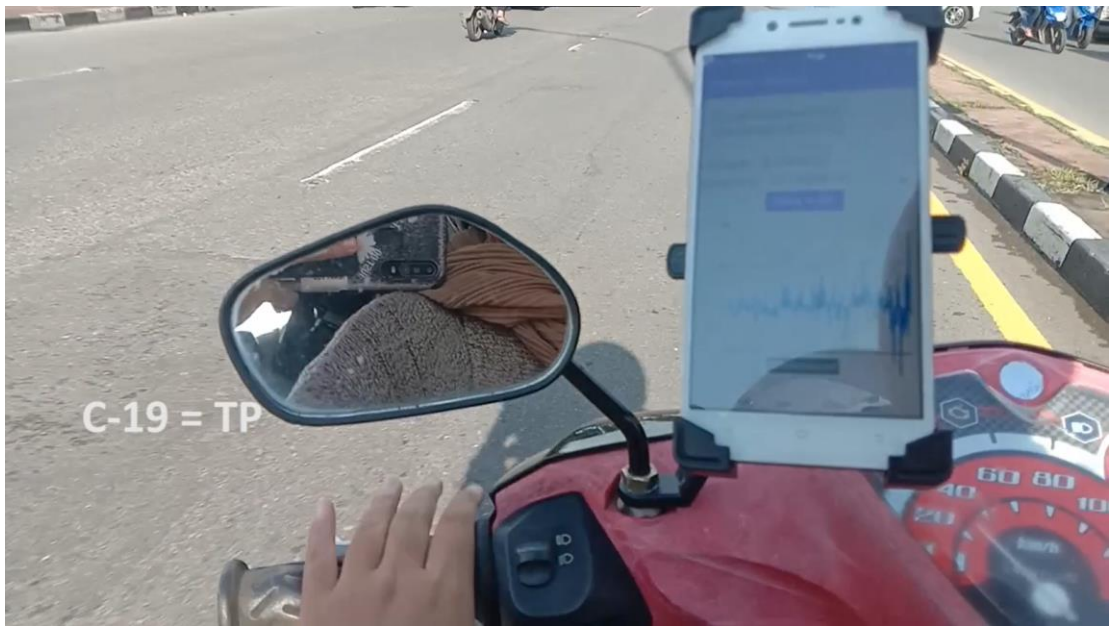


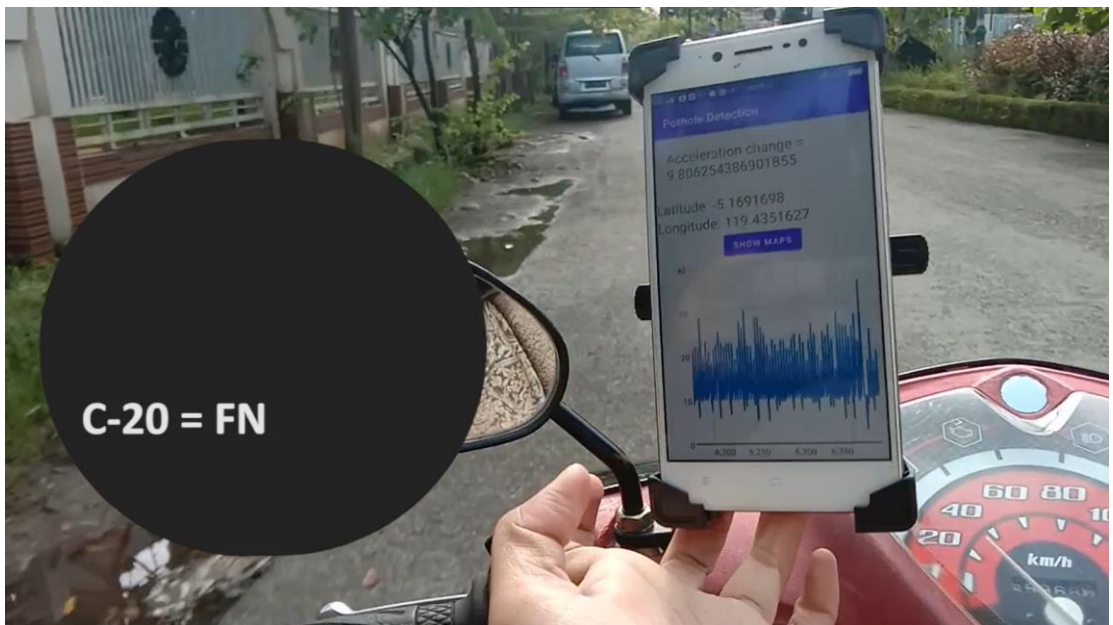


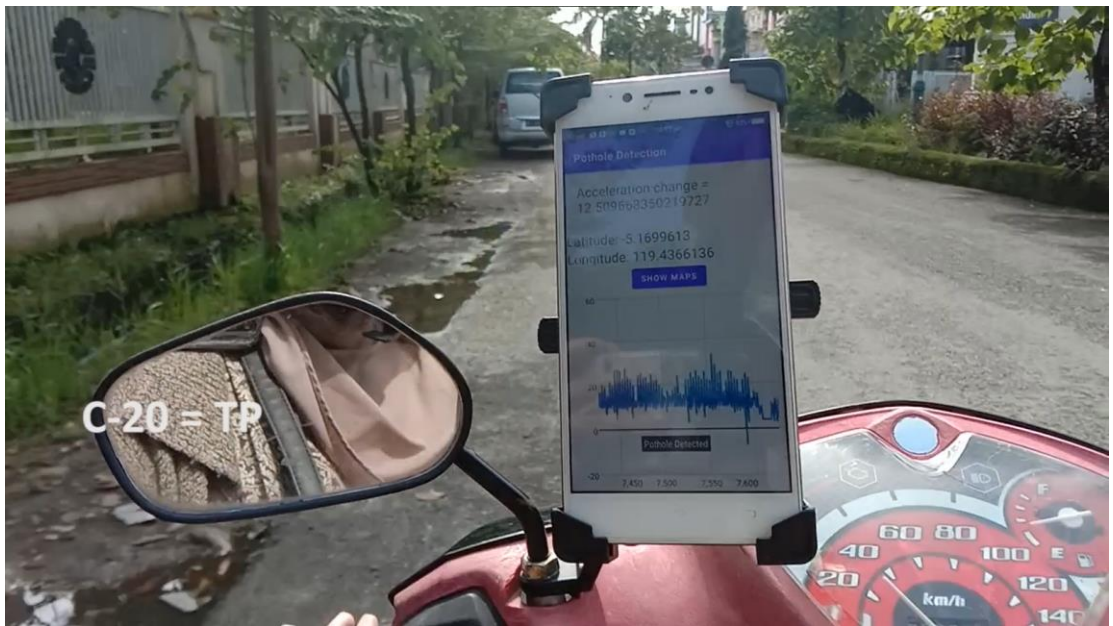
C-19 = FP



C-19 = FN

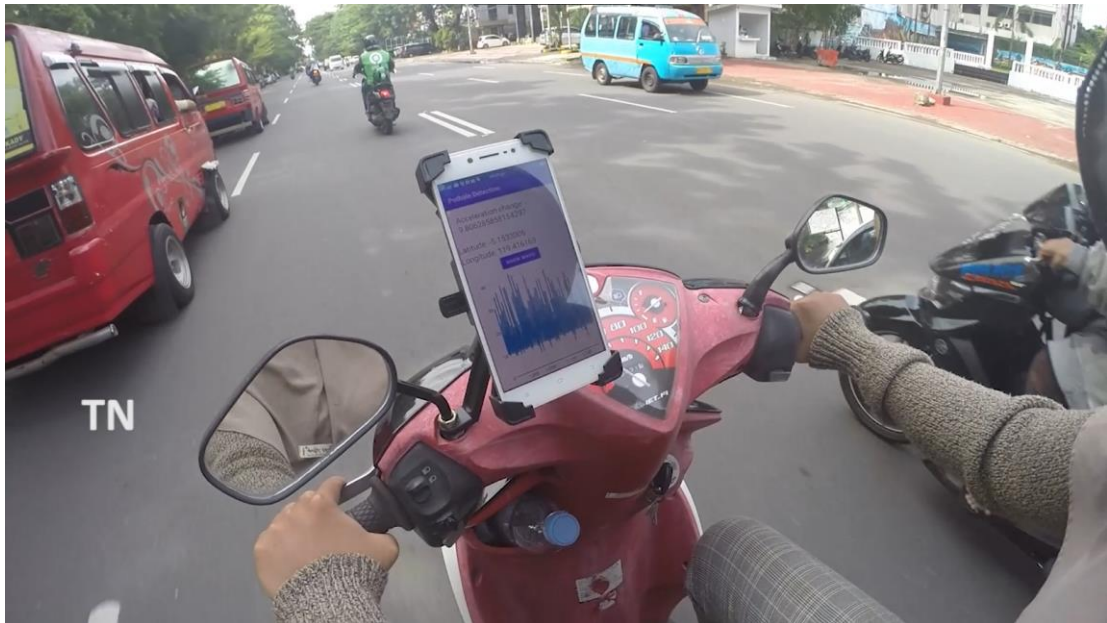






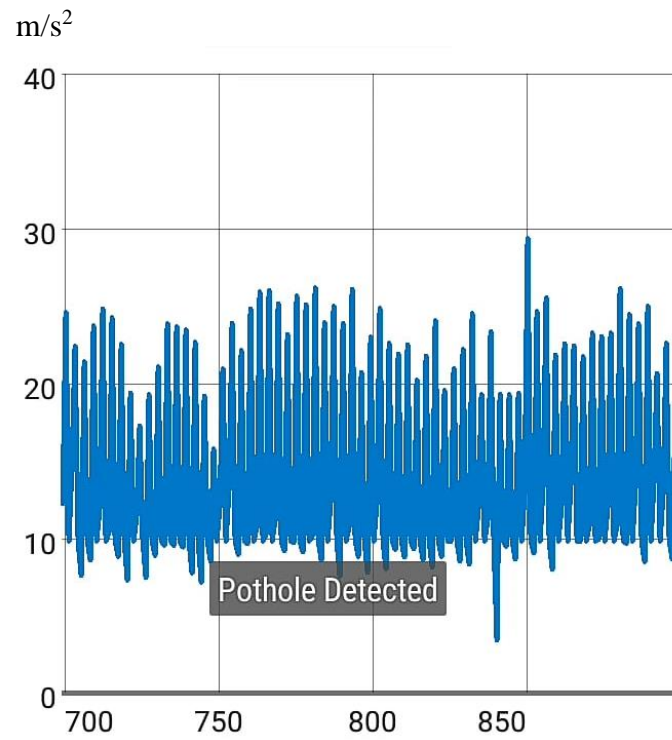
Keterangan:

TN = tidak ada lubang, terdeteksi benar tidak ada lubang

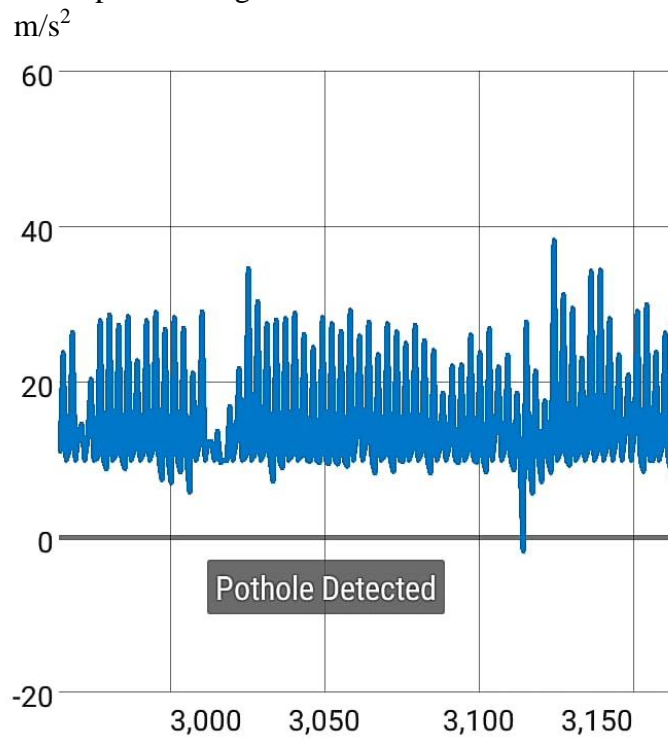


Lampiran 6 Validasi Grafik Akselerasi Tiap Kondisi

1. Grafik akselerasi pada lubang kedalaman 4 cm

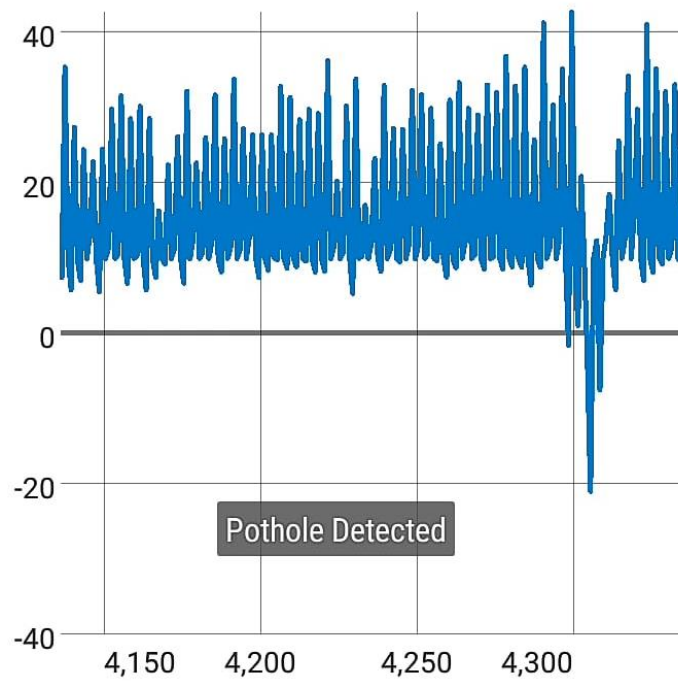


2. Grafik akselerasi pada lubang kedalaman 5 cm



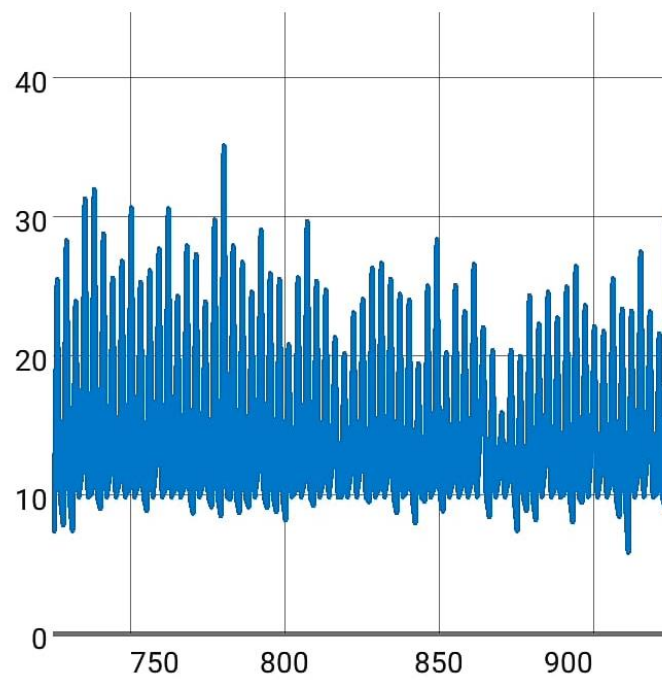
3. Grafik akselerasi pada lubang kedalaman 6 cm

m/s^2



4. Grafik akselerasi pada jalan dalam kondisi baik

m/s^2



LEMBAR PERBAIKAN SKRIPSI

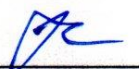

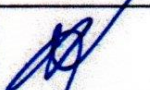

“RANCANG BANGUN SISTEM DETEKSI DAN PEMETAAN JALAN BERLUBANG MENGGUNAKAN AKSELEROMETER DAN GPS PADA SMARTPHONE”

OLEH:


**ILMI NURRAHMA ISMAIL
D121171515**

Skripsi ini telah dipertahankan pada Ujian Akhir Sarjana tanggal 22 Juni 2022. Telah dilakukan perbaikan penulisan dan isi skripsi berdasarkan usulan dari penguji dan pembimbing skripsi.

Persetujuan perbaikan oleh tim penguji:

	Nama	Tanda Tangan
Ketua	Dr. Ir. Zahir Zainuddin, M.Sc.	
Sekretaris	Dr. Eng. Intan Sari Areni, S.T., M.T.	
Anggota	Dr. Amil Ahmad Ilham, S.T., M.IT.	
	Dr. Eng. Ir. Dewiani, M.T.	

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Pembimbing	Nama	Tanda Tangan
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II	Dr. Eng. Intan Sari Areni, S.T., M.T.	