MICHIGAN STATE UNIVERSITY Beta Presentation Mobile Application for XCP Measurement and Calibration The Capstone Experience

Team Bosch

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Fall 2014

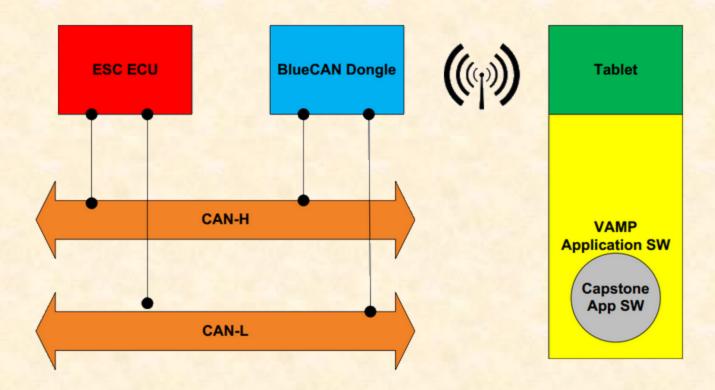


From Students... ...to Professionals

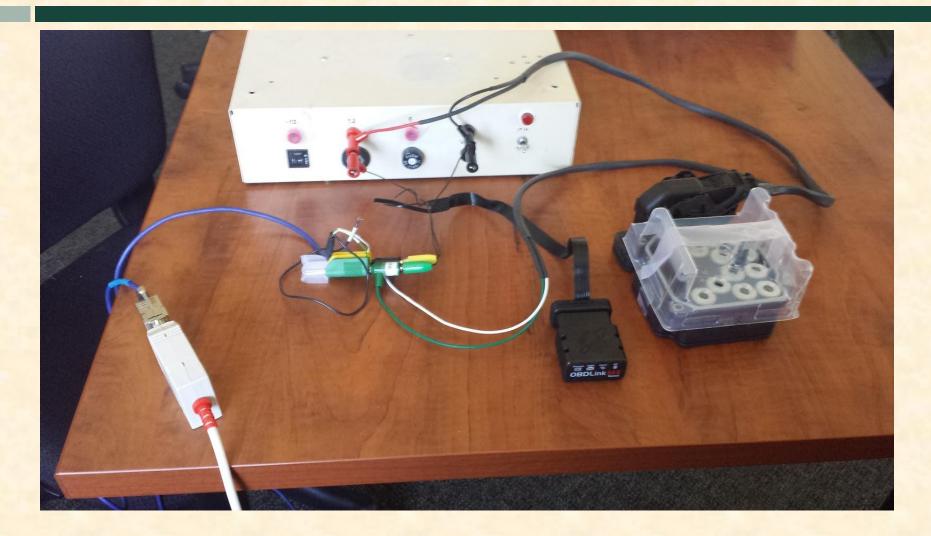
Project Overview

- Mobile application
- That communicates with vehicles
- To receive measurements
- And calibrate vehicles
- Via Bluetooth
- 2880 frames per second per bus

System Architecture

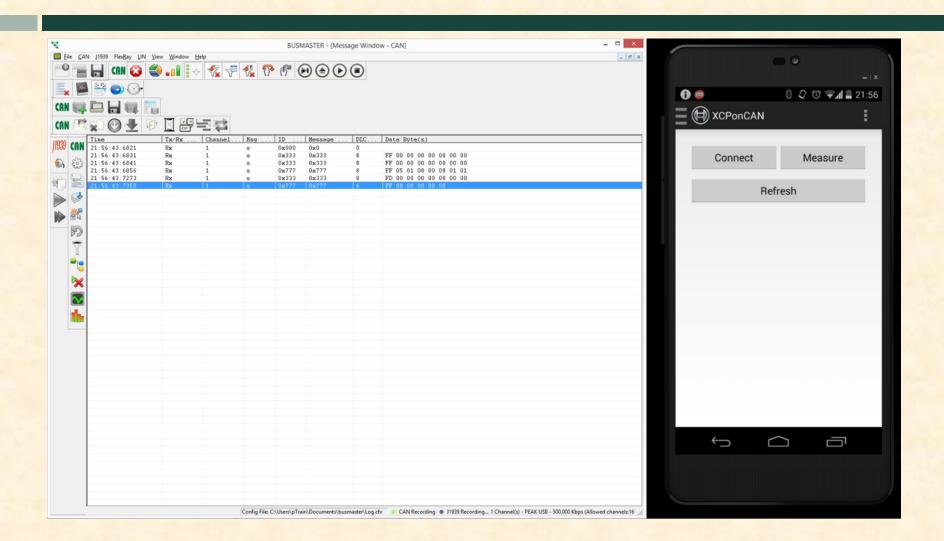


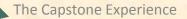
Hardware



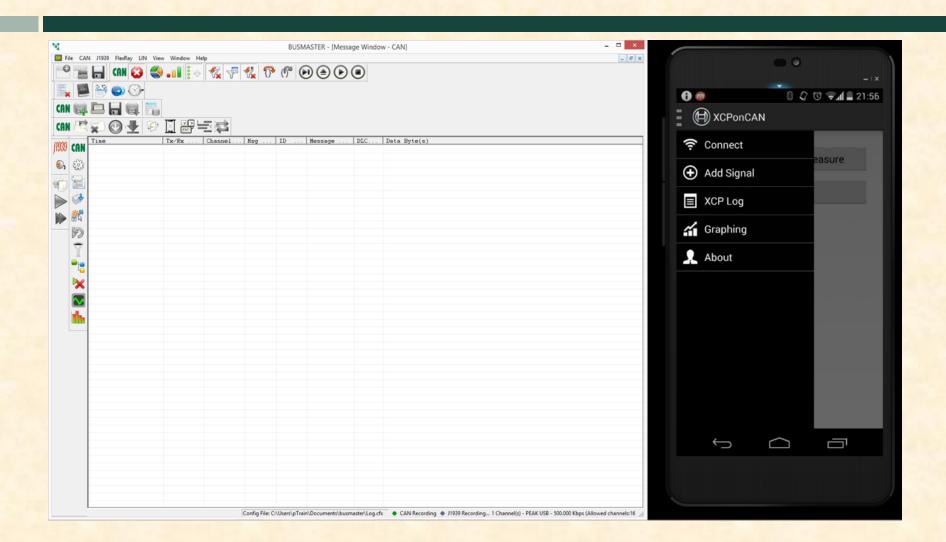
The Capstone Experience

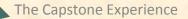
Connect



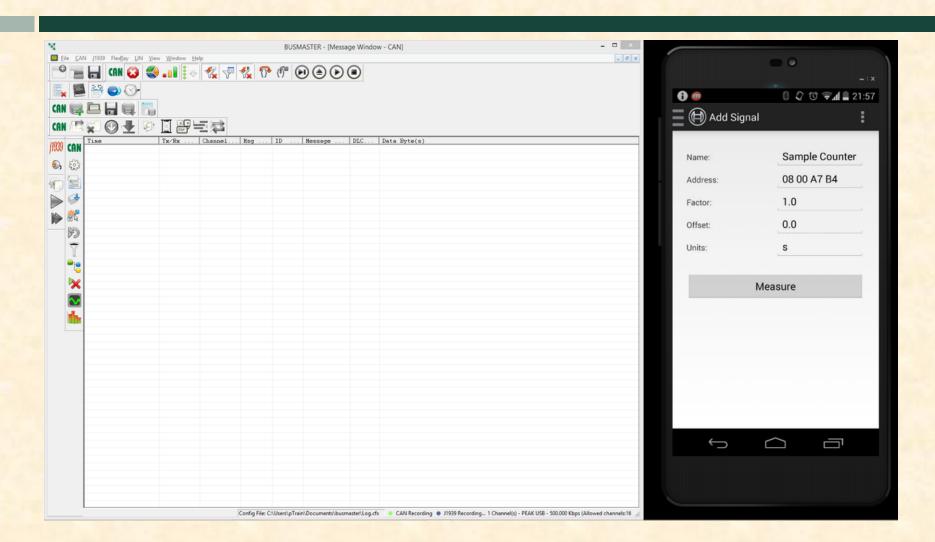


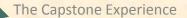
Menu



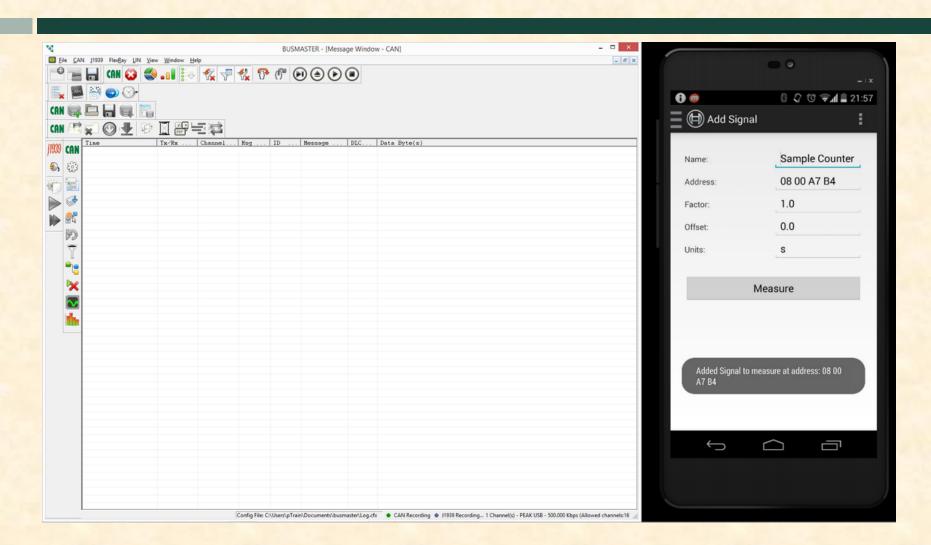


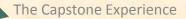
Add Signal





Signal Added





Measure

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89 CAN		Rs	1	s	0x000	0x0	0				
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b 23	22:05:46:7096	Rx	1	s	0x777	0x777	8	FF 05 01 08 00 08 01 01			
	22:05:46:7547	Rx	1	s	0x333	0x333	8	FD 00 00 00 00 00 00 00			
기 날날	22:05:46:7600 22:06:22:3680	Rx	1	5	0x777	0x777 0x333	6	FF 00 00 00 00 00 D6 00 00 00 00 00 00 00			
2	22:06:22:3680	Rx	1	5	0x333 0x777	0x333 0x777	8	FF		R	efresh
> 🕪	22:06:22:3763	Rx	1		0x333	0x333	8	D5 05 00 01 00 00 00 00			
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M	22:06:22:4421	Rx	1	5	0x333	0x333	8	D4 05 00 00 01 00 00 00		earlie country	
	22:06:22:4458	Rx	1	s	0x777	0x777	1	FF			
- >>	22:06:22:4682	Rx	1	s	0x333	0x333	8	D3 05 00 00 00 01 00 00			
	22:06:22:4763	Rx	1	8	0x777	0x777	1	FF			
Y	22:06:22:4792	Rx	1	8	0x333	0x333	8	E2 05 00 00 00 00 00 00			
1	22:06:22:4859	Rx	1	5	0x777	0x777	1	FF			
- Pe		Rs	1	s	0x333	0x333	8	E1 FF 04 00 08 00 Å7 B4			
	22:06:22:4963 22:06:22:5294	Rx	1	8	0x777 0x333	0x777 0x333	1	FF E0 00 00 00 00 01 01 87			
- 📉	22:06:22:5294	Rx	1	5	0x333	0x333 0x777	8	FF			
	22:06:22:5424	Rs	1	8	0x333	0x333	8	DE 02 00 00 00 00 00 00			
	22:06:22:5458	Rx	1		0x777	0x777	2	FF 00			
-	22:06:22:5504	Rx	1	5	0x333	0x333	8	DD 01 00 00 00 00 00 00			
dia.	22:06:22:5563	Rx	1	\$	0x777	0x777	1	FF			
	22:06:22:5568	Rx	1	s	0x777	0x777	5	00 00 00 0E 7E			
	22:06:22:5578	Rx	1	5	0x777	0x777	5	00 00 00 0E 7E			
	22:06:22:5588	Rx	1	s	0x777	0x777	5	00 00 00 0E 7E			
	22:06:22:5598	Rx	1	8	0x777	0x777	5	00 00 00 0E 7E			
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	22:06:22:5618	Rs	1	8	0x777	0x777	5	00 00 00 0E 7E			
	22:06:22:5638	Rs	1	5	0x777	0x777	5	00 00 00 0E 7E			
	22:06:22:5648	Rs	1	8	0x777	0x777	5	00 00 00 0E 7E			
	22:06:22:5659	Rx	1	8	0x777	0x777	5	00 00 00 0E 7E			
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	22:06:22:5688	Rx	1	s	0x777	0x777	5	00 00 00 0E 7E			
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	22:06:22:5708	Rx	1	\$	0x777	0x777	5	00 00 00 0E 7E			
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	22:06:22:5764	Rx	1		0x777	0x777	5	00 00 00 0E 7E			
	22:06:22:5769	Rx	1	8	0x777	0x777	5	00 00 00 0E 7E			
	22:06:22:5778	Rx	1	5	0x777	0x777	5	00 00 00 0E 7E			
	22:06:22:5788	Rs	1	s	0x777	0x777	5	00 00 00 0E 7E			
	22:06:22:5798	Rx	1		0x777	0x777	5	00 00 00 0E 7E	~		

Updating Value

	CAN ©		Channel	• <u>Heg</u> s s s s s s s s s s s s s	ID 0x777 0x777 0x777 0x777 0x777 0x777 0x777 0x777 0x777	Message 0x777 0x777 0x777 0x777 0x777 0x777 0x777	DLC	Data Byte(s) 00 00 01 13 16 00 00 00 13 16		Connect	ے ۱۹۹۵ Measure
Image: Second state Image: Second state Image: Second state Image: Second state <th>Image Image <th< th=""><th>Rx Rx Rx Rx Rx Rx Rx Rx Rx Rx Rx Rx Rx R</th><th>Channel.</th><th>. <u>Msg</u> s</th><th>ID 0x777 0x777 0x777 0x777 0x777 0x777 0x777 0x777 0x777</th><th>Message 0x777 0x777 0x777 0x777 0x777 0x777 0x777</th><th>. DLC 5</th><th>00 00 00 13 16 00 00 00 13 16 00 00 00 13 16 00 00 00 13 16 00 00 00 13 16</th><th> </th><th>Connect Connect</th><th>ັິິ ຊີ ເઉົ ⊋.1 ີ 22: ເ</th></th<></th>	Image Image <th< th=""><th>Rx Rx Rx Rx Rx Rx Rx Rx Rx Rx Rx Rx Rx R</th><th>Channel.</th><th>. <u>Msg</u> s</th><th>ID 0x777 0x777 0x777 0x777 0x777 0x777 0x777 0x777 0x777</th><th>Message 0x777 0x777 0x777 0x777 0x777 0x777 0x777</th><th>. DLC 5</th><th>00 00 00 13 16 00 00 00 13 16 00 00 00 13 16 00 00 00 13 16 00 00 00 13 16</th><th> </th><th>Connect Connect</th><th>ັິິ ຊີ ເઉົ ⊋.1 ີ 22: ເ</th></th<>	Rx Rx Rx Rx Rx Rx Rx Rx Rx Rx Rx Rx Rx R	Channel.	. <u>Msg</u> s	ID 0x777 0x777 0x777 0x777 0x777 0x777 0x777 0x777 0x777	Message 0x777 0x777 0x777 0x777 0x777 0x777 0x777	. DLC 5	00 00 00 13 16 00 00 00 13 16 00 00 00 13 16 00 00 00 13 16 00 00 00 13 16	 	Connect Connect	ັິິ ຊີ ເઉົ ⊋ .1 ີ 22: ເ
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	22:07:09:5951	Re	1	\$	0x777	0x777	5	00 00 00 13 16			
		0.8	1	8	0x777	0x777	5	00 00 00 13 16			
2 2 2		Rx	1	8	0x777	0x777	5	00 00 00 13 16			
2		Rx	1	5	0x777	0x777	5	00 00 00 13 16			
	22:07:09:5971 22:07:09:5980	Rx	1	s	0x777 0x777	0x777 0x777	5	00 00 00 13 16 00 00 00 13 16			
20 *	22:07:09:5990	Rx	1		0x777	0x777	5	00 00 00 13 16			
2	22:07:09:6002	Rx	1	8	0x777	0x777	5	00 00 00 13 16			
2	22:07:09:6010	Rx	1	5	0x777	0x777	5	00 00 00 13 16			
	22:07:09:6020	Rx	1	s	0x777	0x777	5	00 00 00 13 16			
	22:07:09:6030	Rx	1	\$	0x777	0x777	5	00 00 00 13 16			
	22:07:09:6041	Rx	1	\$	0x777	0x777	5	00 00 00 13 16			
	22:07:09:6050 22:07:09:6060	Rx	1	8	0x777 0x777	0x777 0x777	5	00 00 00 13 16 00 00 00 13 16			
	22:07:09:6000	Rs	1		0x777	0x777	5	00 00 00 13 16			
	22:07:09:6080	Rx	1	\$	0x777	0x777	5	00 00 00 13 16			
2	22:07:09:6090	Rx	1	s	0x777	0x777	5	00 00 00 13 16			
	22:07:09:6107	Rx	1	s	0x777	0x777	5	00 00 00 13 16			
	22:07:09:6111	Rx	1	s	0x777	0x777	5	00 00 00 13 16			
	22:07:09:6120 22:07:09:6130	Rs	1	5	0x777 0x777	0x777 0x777	5	00 00 00 13 16 00 00 00 13 16			
	22:07:09:6140	Rx	1	8	0x777	0x777	5	00 00 00 13 16			
	22:07:09:6150	Rx	1	8	0x777	0x777	5	00 00 00 13 16			
2	22:07:09:6160	Rx	1	5	0x777	0x777	5	00 00 00 13 16			
	22:07:09:6170	Rx	1	s	0x777	0x777	5	00 00 00 13 16			
	22:07:09:6180	Rx	1	\$	0x777	0x777	5	00 00 00 13 16			
	22:07:09:6190 22:07:09:6202	Rx	1	\$	0x777 0x777	0x777 0x777	5	00 00 00 13 16 00 00 00 13 16			$-$
	22:07:09:6202	Rx	1	5	0x777	0x777	5	00 00 00 13 16		Ĵ	
	22:07:09:6220	Rs	1	5	0x777	0x777	5	00 00 00 13 17			
	22:07:09:6230	Rx	1	5	0x777	0x777	5	00 00 00 13 17			
2	22:07:09:6240	Rx	1	\$	0x777	0x777	5	00 00 00 13 17			
	22:07:09:6250	Rx	1	s	0x777	0x777	5	00 00 00 13 17			
2	22:07:09:6260	Rx	1	s	0x777	0x777	5	00 00 00 13 17			

What's left to do?

- User manual
- Bug fixes
- Layout updates

