

## รายการอ้างอิง

### ภาษาไทย

ประทีป บัญญตินพรัตน์. การสื่อสารข้อมูล. ภาควิชาวิศวกรรมคอมพิวเตอร์ คณะวิศวกรรมศาสตร์ สถาบันเทคโนโลยีพระจอมเกล้าเจ้าคุณทหารลาดกระบัง, (ม.ป.ป.)

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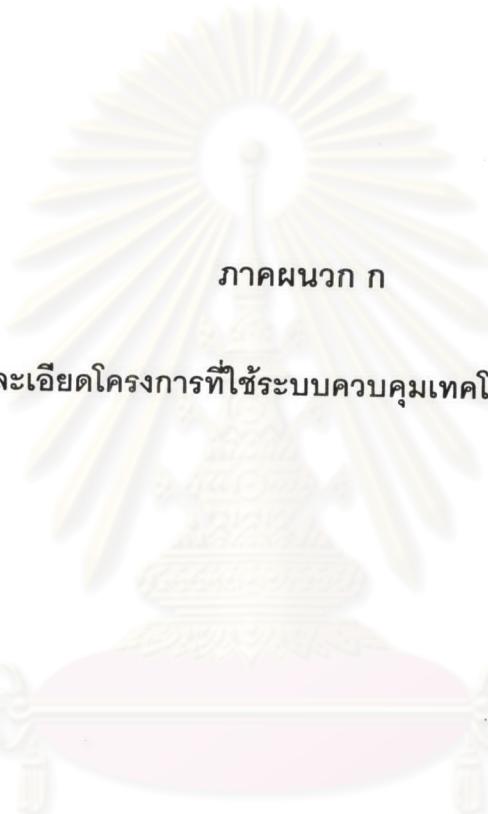
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ศูนย์วิทยทรัพยากร  
จุฬาลงกรณ์มหาวิทยาลัย

ภาคผนวก

ศูนย์วิทยทรัพยากร  
จุฬาลงกรณ์มหาวิทยาลัย



### ภาคผนวก ก

รายละเอียดโครงการที่ใช้ระบบควบคุมเทคโนโลยีพิล์บัส

ศูนย์วิทยทรัพยากร  
จุฬาลงกรณ์มหาวิทยาลัย

## Experience List for Foundation Fieldbus

No.	User Name	Industry	End User Site	Ordered Country	Redundancy	Device Vendors	Field Devices	Status	Delivery Date	Commissioning	I/O Type	Job Type
1.	Backeye Technologies, GmbH	Pulp & Paper	Zaandam, West Germany	Germany	ACF11, Single	Multi-vendors	10 Devices (EJA only)	Operation	March, 1999	April, 1999	Analog + Fieldbus	Commercial Plant
2.	Exxon-Mobil	Oil Refinery	Singapore	Singapore	ACF11, Single	Yokogawa	6 devices (EJA only)	Operation	May, 1999	June, 1999	Analog + Fieldbus	Commercial Plant
3.	U Sicon	Chemical	Japan	Japan	ACF11, Single	Yokogawa	21 Devices (YEWFL0'E)	Operation	Sep., 1999	Oct., 1999	Analog + Fieldbus	Commercial Plant
4.	M Chemical	Chemical	Japan	Japan	ACF11, Single	Multi-vendors	5 devices	Operation	Sep., 1999	Oct., 1999	Analog + Fieldbus	Commercial Plant
5.	Norit Nederland B.V.	Gas Desulphurization	Zaandam, Netherlands	Netherlands	ACF11, Single	Yokogawa	16 devices (EJA)	Operation	Sep., 1999	Oct., 1999	Analog + Fieldbus	Commercial Plant
6.	G-W Port Ferry	Parma	Australia	Australia	ACF11, Single	Multi-vendors	39 devices (all fieldbus)	Operation	Sep., 1999	Oct., 1999	Full Fieldbus	Commercial Plant
7.	R Chemical	Chemical	U.S.A	U.S.A	ACF11, Single	Yokogawa	15 devices	Operation	Oct., 1999	Nov., 1999	Analog + Fieldbus	Commercial Plant
8.	R Chemical	Chemical	U.S.A	U.S.A	ACF11, Single	Yokogawa	5 devices	Operation	April, 2000	April, 2000	Fieldbus	Commercial Plant
9.	F Chemical	Chemical	Japan	Japan	ACF11, Single	Multi-vendors	49 devices	Operation	Oct., 1999	Nov., 1999	Analog + Fieldbus	Commercial Plant

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No.	User Name	Industry	End User Site	Ordered Country	Redundancy	Device Vendors	Field Devices	Status	Delivery Date	Commissioning	I/O Type	Job Type
10.	N-M Petroleum Refining	Oil Refinery	Japan	Japan	ACF11, Single (including optical devices)	Multi-vendor	29 devices	Operation	Nov., 1999	Nov., 1999	Analog + Fieldbus + Radio	Commercial Plant
11.	A Refinery	Oil Refinery	Saudi	Saudi	ACF11, Single	Multi-vendors	More than 3 Devices	Operation	Feb.,2000	March,2000	Analog + Fieldbus	Commercial Plant
12.	Z Chemical	Chemical	U.S.A	U.S.A	ACF11, Single	Multi-vendors	More than 3 devices	Operation	April, 2000	August, 2000	Analog + Fieldbus	Commercial Plant
13.	SEPL(Shell)	Oil Refinery	Singapore	Singapore	ACF11, Single	Multi-vendors	More han 7 devices	Operation	May, 2000	June, 2000	Analog + Fieldbus	Commercial Plant
14.	B Chemicals Greenlake	Chemical	U.S.A	U.S.A	ACF11, Single	Multi-vendors	4 devices	Operation	March, 2000	June, 2000	Analog + Fieldbus	Commercial Plant
15.	KANA controls Kuwait (EPC) / J Operations - Kuwait	Chemical	Kuwait	Kuwait	ACF11, Single	Yokogawa	45 Devices	Operation	June, 2000	Oct., 2000	Analog + Fieldbus	Commercial Plant
16.	T (EPC) / T Chemical Matsuyama	Chemical	Japan	Japan	ACF11, Single	Yokogawa	More Than 200 devices	Operation	August, 2000	March, 2001	Fieldbus	Commercial Plant
17.	B Chemical Ltd. / B Chemical	Chemical	Cardiff, UK	UK	ACF11, Single	Foxboro	II DP10-FSCC01FT (6 devices)	Operation	June, 2000	Sep., 2000	Analog + Fieldbus	Commercial Plant
18.	KF Oil Petroform / G Oil Company	Oil Refinery	Indonesia	Australia	ACF11, Single	Yokogawa, Rosemount	Some Devices	Operation	Sep., 2000	Sep., 2000	Analog + Fieldbus	Commercial Plant

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No.	User Name	Industry	End User Site	Ordered Country	Redundancy	Device Vendors	Field Devices	Status	Delivery Date	Commissioning	I/O Type	Job Type
19.	MOL H Oil and Gas Company	Oil Refinery Underground Gas Storage, Valve Monitoring Application	Hajduszoboszlo, Hungary	Hungary	ACF11, Single	Rotork	Rotork Actuator 44 devices	Operation	Nov., 2000	Dec., 2000	Analog + Fieldbus	Commercial Plant
20.	S Chemicals Niihama	Chemical (DA Project)	Japan	Japan	ACF11, Single	Multi-vendors	more than 6 Devices (EJA, YVP, YTA, JTC929A (Yamatake), 5300, STREE)	Operation	Sep., 2000	Dec., 2000	Analog + Fieldbus	Commercial Plant
21.	E Petrochemical Co.	Petro-chemical (Auto Ignition System for Heaters)	Iran	Iran	ACF11, Single	Multi-vendors	Some devices (YVP, EJA, 3051)	Operation	June, 2000	November, 2000	Analog + Fieldbus	Commercial Plant
22.	M Chemical	Chemical	India	India	ACF11, Single	Yokogawa	7 devices (EJA)	Operation	March., 2000	Oct., 2000	Analog + Fieldbus	Commercial Plant
23.	U Company	Iron & Steel	Brazil	Brazil	ACF11, Single	Multi-vendors	More than 3 Devices	Operation	Nov., 2000	Nov., 2000	Analog + Fieldbus	Commercial Plant
24.	FCC	Chemical	Brazil	Brazil	ACF11, Single	Multi-vendors	More than 3 Devices	Operation	Nov., 2000	Nov., 2000	Analog + Fieldbus	Commercial Plant
25.	Montell (Shell)	Chemical / Polypropylene Catalyst Plant	Italy	Italy	ACF11, Single	Multi-vendors	several devices	Operation	Nov., 2000	Nov., 2000	Analog + Fieldbus	Commercial Plant
26.	Y Chemical / Z PETRO-CHEMICAL	Petro-Chemical	China	China	ACF11, Single	Rosemount	More than 4 devices (3051)	Operation	March, 2000	October, 2000	Analog + Fieldbus	Commercial Plant
27.	T Chemical Mishima	Chemical	Japan	Japan	ACF11, Single	Yokogawa	More than 16 devices	Operation	Nov., 2000	Feb., 2001	Analog + Fieldbus	Commercial Plant

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28.	G-W Port Ferry	Parma	Australia	Australia	ACF11, Single	Multi Vendors	17 devices	Operation	Dec., 2000	Jan, 2001	FF, Profibus-DP/PA, AS-I	Commercial Plant
29.	B Nuclear Fuels PLC	Nuclear	Preston, UK	UK	ACF11, Single	Multi Vendors	More than 9 devices	Operation	Feb., 2001	Feb., 2001	Analog + Fieldbus	Commercial Plant
30.	P Raya Company	Chemical	Indonesia	Indonesia	ACF11, Single	Yokogawa	Some devices	Operation	Dec., 2000	March, 2001	Analog + Fieldbus	Commercial Plant
31.	N-Seishi Toyama	Paper & Pulp	Japan	Japan	ACF11, Single	Yokogawa	More than 100 devices	Operation	August, 2000	April, 2001	Analog + Fieldbus	Commercial Plant
32.	SAS Company	Chemical/ Cartoo Tar Plant	South-Africa	South-Africa	ACF11, Single	Rosemount	More than 20 devices	Operation	1Q, 2001	1Q, 2001	Analog + Fieldbus	Commercial Plant
33.	F Cement Company	Cement	China	China	ACF11, Single	Rosemount 3051, 3244	More than 61 devices	Operation	May, 2001	July, 2000	Analog + Fieldbus	Commercial Plant
34.	POS Company/POS Company	Steel & Iron	Korea	Korea	ACF11, Single	Yokogawa	One Device (EJA Transmitter)	Operation	Feb., 2000	March, 2000	Analog + Fieldbus	Commercial Plant
35.	T Gas Midorihamama	Gas Terminal	Japan	Japan	ACF11, Single	Yamatake	6 devices	Operation	Nov., 2000	July, 2001	Analog + Fieldbus	Commercial Plant
36.	MI Chemical	Chemical	India	India	ACF11, Single	Multi Vendors (Yokogawa, Rosemount, Fisher)	36 devices	Operation	March, 2001	August, 2001	Analog + Fieldbus	Commercial Plant

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No.	User Name	Industry	End User Site	Ordered Country	Redundancy	Device Vendors	Field Devices	Status	Delivery Date	Commissioning	I/O Type	Job Type
37.	Naf Company	Petro-chemical	Europe	Europe	ACF11, Single	Multi Vendors	More than 10 devices	Operation	2Q, 2001	2Q, 2001	Analog + Fieldbus	Commercial Plant
38.	BOR Company	Water Treatment	Hungary	Hungary	ACF11, Single	Multi Vendors	More than 10 devices	Operation	2Q, 2001	2Q, 2001	Analog + Fieldbus	Commercial Plant
39.	ANW S.A. Company	Chemical (VCM Plant)	Poland	Poland	ACF11, Single	Multi Vendors (E+H, Rose, HW)	More than 10 devices	Operation	2Q, 2001	2Q, 2001	Analog + Fieldbus	Commercial Plant
40.	I di Fisica Nucleare Company	R & D Institute	Catania, Italy	Italy	ACF11, Single	More than 3 devices	several devices	Operation	2Q, 2001	2Q, 2001	Analog + Fieldbus	Commercial Plant
41.	M Srl Company	Industrial Waste Treatment	Forni, Italy	Italy	ACF11, Single	More than 20 devices	several devices	Operation	2Q, 2001	2Q, 2001	Analog + Fieldbus	Commercial Plant
42.	H & W, Castleford, West Yorkshire Company	Chemical	U.K.	U.K.	ACF11, Single	Yokogawa	Several Devices (Yokogawa YTA320)	Engineering	June, 2001	July, 2001	Existing Analog + Fieldbus	Commercial Plant
43.	PT PIP Company	Chemical (Fatty Alcohol & Utility Process)	PT PIP	Indonesia	ACF11, Single	Yokogawa	More than two devices	Operation	Aug., 2001	Sep., 2001	Analog + Fieldbus	Commercial Plant
44.	M Polysilicon Company	Chemical	U.S.A	U.S.A	ACF11, Single	Yokogawa (Multi Vendors)	More than 102 devices	Operation	August, 2001	Nov., 2001	Fieldbus	Commercial Plant
45.	H Plains Company	Chemical (Ethanol)	Nebraska, U.S.A	U.S.A	ACF11, Single	Pending	Pending	Pending for FF Part	August, 2001	October, 2001	Analog + Fieldbus	Commercial Plant

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No.	User Name	Industry	End User Site	Ordered Country	Redundancy	Device Vendors	Field Devices	Status	Delivery Date	Commissioning	I/O Type	Job Type
46.	P Company	Food (Salt)	Pimal Salt	Thailand	ACF11, Single	Yokogawa	More than ten devices	Operation	1Q, 2002	1Q, 2002	Analog+ Fieldbus	Commercial Plant
47.	A Company	Chemical	Brazil	Brazil	ACF11, Single	Yokogawa (Multi Vendors)	More than 363 Devices	Operation	Sep, 2001	1Q, 2002	Analog+ Fieldbus	Commercial Plant
48.	BASELL Company	Fine Chemicals	Ferrara, Italy	Italy	ACF11, Single	Multi Vendors	More than 12 devices	Commissioning	4Q, 2001	4Q, 2001	Analog+ Fieldbus	Commercial Plant
49.	S (EPC) / T Petrochemical	Petrochemical (ABS Plant)	Iran	Korea	ACF11, Single	Multi Vendors	More than 300 devices	Waiting for Start-up	September, 2001	3Q, 2002	Fieldbus (except ESD and package unit I/Os)	Commercial Plant
50.	P (EPC) / A Kabir Petrochemical Co.	Petrochemical (Butane Plant)	Iran	Iran	ACF11, Single	Multi Vendors	More than 270 devices	Waiting for Start-up	Dec., 2001	3Q, 2002	Analog + Fieldbus	Commercial Plant
51.	C(EPC) / T Petrochemical Co.	Petrochemical (Butadiene-1 Plant)	Iran	Spain	ACF11, Single	Yokogawa (Multi Vendors)	More than 218 devices	Waiting for Start-up	August, 2001	3Q, 2002	Analog + Fieldbus	Commercial Plant
52.	C(EPC) / A Kabir Petrochemical Co.	Petrochemical (Butadiene-2 Plant)	Iran	Spain	ACF11, Single	Yokogawa (Multi Vendors)	More than 256 devices	Waiting for Start-up	September, 2001	3Q, 2002	Analog + Fieldbus	Commercial Plant
53.	SN (EPC) / F Petrochemical	Petrochemical (Methanol)	Iran	Italy	ACF11, Single	Yokogawa (Multi Vendors)	More than 300 devices	FAT	1Q, 2002	3Q, 2002	Analog + Fieldbus	Commercial Plant
54.	Chi (EPC) / N-M Petroleum Refining	Oil Refinery	Japan and Saudi	Japan	ALF111, Redundant	Yokogawa (Multi Vendors)	More Than 200 devices	Commissioning	March, 2002	3Q, 2002	Analog+ Fieldbus	Commercial Plant

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## Experience List for Foundation Fieldbus

No.	User Name	Industry	End User Site	Ordered Country	Redundancy	Device Vendors	Field Devices	Status	Delivery Date	Commissioning	I/O Type	Job Type
55.	D-Oxeno	Fine Chemical	Germany	Germany	ALF111, Redundant	Multi Vendors	More than 20 devices	Commissioning	1Q, 2002	3Q, 2002	Analog + Fieldbus	Commercial Plant
56.	UNO Company	Gas Development	Indonesia	Indonesia	ALF111, Redundant	Yokogawa	App. 150 Devices	Commissioning	March, 2002	3Q, 2002	Analog + Fieldbus	Commercial Plant
57.	P(EPC) / B Ali Sina	Petro-chemical (Aromatics)	Iran	Netherlands and Belgium	ALF111, Single	Yokogawa	More than 980 devices (AI Monitoring only)	FAT	2Q, 2002	4Q, 2002	Analog + Fieldbus	Commercial Plant
58.	S-Saffron	Gas Development	Egypt	Egypt	ALF111, Redundant	Multi Vendors	More than 600 devices	Engineering	3Q, 2002	1Q, 2003	Analog + Fieldbus	Commercial Plant
59.	Assuit Oil Refining Co.	Oil Refinery (Revamp PJT for Catalytic Reformer and Vacuum Reformer)	Egypt	Egypt	ALF111, Redundant	Multi Vendors	More than 300 devices	Engineering	2Q, 2002	4Q, 2002	Analog + Fieldbus	Commercial Plant
60.	TE (EPC)	Petrochemical (Biggest Aromatics Plant in the world)	Sazeh, Iran	Japan	ALF111, Redundant	Yokogawa (Main) and Multi-vendors	App. 1900 devices	Engineering	2Q, 2002	1Q, 2003	Analog + Fieldbus	Commercial Plant
61.	Shell Nigeria (SPDC)	Gas Development	Nigeria	Netherlands	ALF111, Redundant	Yokogawa (main) and Multi-vendors	App. 40 EJA, 4 YF, 25 YVP, 20 YTA, others	Engineering	2Q, 2002	2Q, 2002	Analog + Fieldbus (FF & Profibus)	Commercial Plant
62.	NISL (Northern Integrated Services Limited) / Shell Exploration and Production, UK	Gas Development	UK	UK	ALF111, Redundant	Yokogawa and Multi-vendors	App. 190 devices	Engineering	July, 2002	Dec., 2002	Analog with HART + Fieldbus	Commercial Plant
63.	S Chemicals	Petro-Chemical	Chiba , Japan	Japan	ALF111, Redundant	Yokogawa	App. 40 devices	Engineering	May, 2002	2Q, 2002	Analog + Fieldbus	Commercial Plant

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No.	User Name	Industry	End User Site	Ordered Country	Redundancy	Device Vendors	Field Devices	Status	Delivery Date	Commissioning	I/O Type	Job Type
64.	B (EPC) / S Power Co. at Sakaidé	Power	Japan	Japan	ALF111, Redundant	Yokogawa and Multi-vendors (Yamatake)	More than 30 devices (EJA x 10, YVP x 9, ADMAG x 1, YEWFO x 1.)	Engineering	3Q, 2002	4Q, 2002	Analog + Fieldbus	Commercial Plant
65.	MCEC (EPC) / MKC (EPC) / S Tondgoorian Petrochemical Co	Petrochemical (PTA 2 Plant)	Iran	Japan	ALF111, Redundant	Yokogawa and Multi-vendors	More than 300 devices	Ordered / Engineering by EPC	2Q, 2002	1Q, 2003	Analog + Fieldbus	Commercial Plant
66.	H Oil & Gas Corp. (MOL)	Refinery	Hungary	Hungary	ALF111	Yokogawa and Multi-vendors	Several devices	Engineering	2Q, 2002	2Q, 2002	Analog + Fieldbus	Commercial Plant
67.	SAS Ph Ltd	Chemical (Gasifier Plant)	South-Africa	South-Africa	ALF111	Yokogawa	Several devices	Engineering	2Q, 2002	2Q, 2002	Analog + Fieldbus	Commercial Plant
68.	S Kyoto Company	Food (Beer)	Japan	Japan	ALF111	Yokogawa (EJA/YTA x30, YVPx20)	App. 50 devices	Engineering	2Q, 2002	3Q, 2002	Analog + Fieldbus, AS-i bus	Commercial Plant
69.	I- K Company	Refinery	Chiba, Japan	Japan	ACF11, Single	Yokogawa	App. 80 devices	Engineering	3Q, 2002	4Q, 2002	Analog + Fieldbus	Commercial Plant
70.	TECN (EPC) / A Kabir Petrochemical Complex	Petrochemical (LLDPE/Olefine 6 Complex)	Iran	France	ALF111 Redundant	Yokogawa and Multi-vendors	More Than 200 devices	Engineering	1Q, 2003	3Q, 2003	Analog + Fieldbus	Commercial Plant
71.	TECN(EPC) / Pars Petrochemical Complex	Petrochemical (Ethylene/ Olefin 9 Complex)	Iran	France	ALF111 Redundant	Yokogawa and Multi-vendors	More Than 300 devices	Engineering	2Q, 2003	1Q, 2004	Analog + Fieldbus	Commercial Plant
72.	K-U (EPC)	Petrochemical (HDPE/ Olefin 7 Complex)	Iran	Germany	ALF111 Redundant	Yokogawa and Multi-vendors	More Than 200 devices	Engineering	1Q, 2003	3Q, 2003	Analog + Fieldbus	Commercial Plant

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No.	User Name	Industry	End User Site	Ordered Country	Redundancy	Device Vendors	Field Devices	Status	Delivery Date	Commissioning	I/O Type	Job Type
73.	K-U (EPC)	Petrochemical - (HDPE/ Olefin 10 Complex)	Iran	Germany	ALF111 Redundant	Yokogawa and Multi-vendors	More Than 200 devices	Engineering	1Q, 2003	3Q, 2003	Analog + Fieldbus	Commercial Plant
74.	D Company	Chemical (High Density Fiber)	Brazil	Brazil	ALF111 Redundant	Yokogawa and Samson	More than 150 devices	Engineering	August, 2002	October, 2002	Analog + Fieldbus	Commercial Plant
75.	SKW B Company	Chemical	Belgium	Belgium	ALF111	Yokogawa	Two DAQS STATIONS	Engineering	2Q,2002	2Q,2002	Analog + Fieldbus	Commercial Plant
76.	N (EPC) / KZPC - B Imam	Chemical (Polymer)	Iran	Italy	ALF111	Yokogawa and Multi-vendors	More than 500 Devices	Engineering	4Q,2002	2Q,2003	Analog + Fieldbus	Commercial Plant
77.	I Vonk B.V	Oil & Gas (On-shore)	Netherlands	Netherlands	ALF111	Yokogawa and Multi-vendors	More than 200 Devices	Engineering	4Q, 2002	1Q, 2003	Analog + Fieldbus	Commercial Plant
78.	Pimai Salt	Food(Salt)	Korat	Thailand	ACF11, Single	Yokogawa	More than 10 Devices	Operation	1Q,2002	1Q,2002	Analog + Fieldbus	Commercial Plant
79.	Ajinomoto	Textile	Kumpengpet	Thailand	ALF11,Single	Yokogawa	More than 10 Devices	Operation	Q4,2002	05,2003	Analog + Fieldbus	Commercial Plant
80.	Caltex	Oil	Rayong	Thailand	ACF11, Single	Yokogawa	38 Device	SAT&Commissioning	12,2002	09,2003	Analog(Hart) + Fieldbus	Commercial Plant
81.	TAF	Textile	Saraburi	Thailand	ALF11,Single	Yokogawa	512 Device	Project Executing	12,2002	01,2004	Analog + Fieldbus	Commercial Plant

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No.	User Name	Industry	End User Site	Ordered Country	Redundancy	Device Vendors	Field Devices	Status	Delivery Date	Commissioning	I/O Type	Job Type
<b>Field Devices (Big Order: More than 30 Devices)</b>												
1.	S & W (EPC) / C Energy Company	Power	U.S.A	U.S.A		Multi-vendors	Many devices (120 EJA Transmitters by Yokogawa)	Operation	June, 1999	July, 1999		Commercial Plant
2.	PNOS- P- Nefte Org Sinteg Company	Refinery	Russia	Russia		Multi-vendors	Many devices (86 EJA Transmitters by Yokogawa)	Operation	Sep., 2000	Dec., 2000		Commercial Plant
3.	U Hellas a.e.b.e	Chemical (Chlorine Caustic Soda)	Europe	Europe		Yokogawa	17 EJA, 11 YTA, 2 YEWFL0*E, 4 ADMAG, 21 YVP	Operation	2Q, 2001	2Q, 2001		Commercial Plant
4.	M SA Company	Chemical	France	France		Yokogawa	33 Devices	Operation	3Q, 2001	3Q, 2001		Commercial Plant
5.	S Canada Company	Refinery	Canada	Canada		Yokogawa	500 Vortex Flowmeter YEWFL0*E	Ordered	Jan., 2001	March, 2001		Commercial Plant
6.	CTCI (Taiwan EPC) / China End User	Chemical (PTA)	China	Taiwan		Yokogawa	App. 150 EJA Devices	Ordered	1Q, 2002	2Q, 2002		Commercial Plant
7.	CCMC	Utility (Boiler)	Taiwan	Taiwan		Yokogawa	App. 170 EJA Devices	Ordered	1Q, 2002	2Q, 2002		Commercial Plant
8.	S-nigi SpA Company	???	Italy	Italy		Yokogawa	105 Devices	Ordered				Commercial Plant

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No.	User Name	Industry	End User Site	Ordered Country	Redundancy	Device Vendors	Field Devices	Status	Delivery Date	Commissioning	I/O Type	Job Type
<b>FF Trial &amp; Test Project</b>												
1.	Chubu Power	Electric Power	Japan	-----	ACF11, Single	Multi-vendors	5 devices	Finished	April, 1997	Full Fieldbus	Trial Test	
2.	SGS (Shell) / R&D Center	Oil Refinery	Netherlands	-----	ACF11, Single	Multi-vendors	15 devices	Finished	Oct., 1998	Full Fieldbus	Trail Test by Pilot Plant	
3.	SGS (Shell) / R&D Center	Oil Refinery	Netherlands	-----	ACF11, Single	Multi-vendors	23 devices	Finished	July., 1999	Full Fieldbus	Trail Test by Pilot Plant	
4.	SGS (Shell) / R&D Center	Oil Refinery	Netherlands	Netherlands	ALF11, Redundant	Multi-vendors	23 devices	Operation	Oct., 2001	Full Fieldbus	Trail Test by Pilot Plant	
5.	JGC (EPC) Company	EPC	Japan	Japan	ACF11, Single	Multi-vendors	13 devices	Finished	Feb., 1999	Full Fieldbus	Trail Test by Pilot Plant	
6.	S Company USA	Oil Refinery	U.S.A	U.S.A	ALF11, Redundant	Multi-vendors	Several Devices	Operation	Sep., 2001	Oct., 2001	Analog + Fieldbus	Trial Test
7.	CH Company USA	Oil Refinery	U.S.A	U.S.A	ALF11, Redundant	Multi-vendors	Several Devices	Operation	Sep., 2001	Oct., 2001	Analog + Fieldbus	Trial Test
8.	SH Power Co. at Saitou	Power	Japan	-----	ACF11, Single	Yokogawa, Yamatake	Several devices	Operation	Nov., 2001	Jan., 2002	Fieldbus	Trial Test

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9.	PT. BADA K NGL	Oil Refinery	Indonesia	Indonesia	ACF11, Single	Yokogawa	2 devices (E/JA)	Operation	Oct., 1999	Feb., 2000	Analog + Fieldbus	Test Plant
10.	A Refinery Company	Oil Refinery	Saudi	Saudi	ACF11, Single	Multi-vendors	4 Devices	Operation	Feb., 1999	Feb., 2000	Analog + Fieldbus	Test Plant
11.	Singapore Polytechnic	Others	Singapore	Singapore	ACF11, Single	Multi-vendors	8 devices	Operation	August, 2000	August, 2000	Fieldbus	Test Plant
12.	Institute Technology Bandung Indonesia (Indonesia ITB)	Others	Indonesia	Indonesia	ACF11, Single	Yokogawa	1 device	Operation	Sep., 2000	Oct., 2000	Fieldbus	Test Plant
13.	Petrovietnam	Others	Vietnam	Vietnam	ACF11, Single	Yokogawa	1 device	Operation	October, 2000	December, 2000	Analog + Fieldbus	Test Plant
14.	Chiyoda (EPC)	Others	Japan	Japan	ACF11, Single	Yokogawa	Some Devices	Operation	2Q, 2001	2Q, 2001	Fieldbus	Trail Test

## ประวัติผู้เขียนวิทยานิพนธ์

นายประisan ต้วมศรี เกิดเมื่อวันที่ 16 ตุลาคม พ.ศ. 2517 ที่จังหวัดเพชรบูรี สำเร็จการศึกษาปริญญาตรีวิศวกรรมศาสตรบัณฑิต ภาควิชาวิศวกรรมไฟฟ้า คณะวิศวกรรมศาสตร์ จากมหาวิทยาลัยศรีนครินทรวิโรฒ เมื่อปี พ.ศ. 2539 หลังจากนั้นเข้าทำงานในตำแหน่งวิศวกร ที่การไฟฟ้าฝ่ายผลิตแห่งประเทศไทย จนถึงปัจจุบัน เข้าศึกษาต่อในหลักสูตรวิศวกรรมมหาบัณฑิต ภาควิชาอุตสาหการ คณะวิศวกรรมศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย ในปีการศึกษา 2544

