Plant Management Information System in SECCO

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Agenda

- SECCO introduction
- The objective of SECCO PMIS project
- The content of SECO PMIS
- Conclusion

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SECCO Introduction

- Shanghai SECCO Petrochemical Company Limited is jointly invested by

50%

30%

20%

  - Total investment: 2.7 billion USD

- SECCO is by far one of the biggest petrochemical projects of joint venture in China. The joint venture is located in Shanghai Chemical Industrial Park (SCIP) covering an area of about 200 hectares.

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SECCO Location

- Reclaimed land at Caojing, 15km from SPC Jinshan site within Shanghai Chemical Industry Park
- Chemical zone area larger than BASF Ludwigshafen site
- Planned as Shanghai chemical center with strong political support
- BASF, Huntsman, Bayer existing plans

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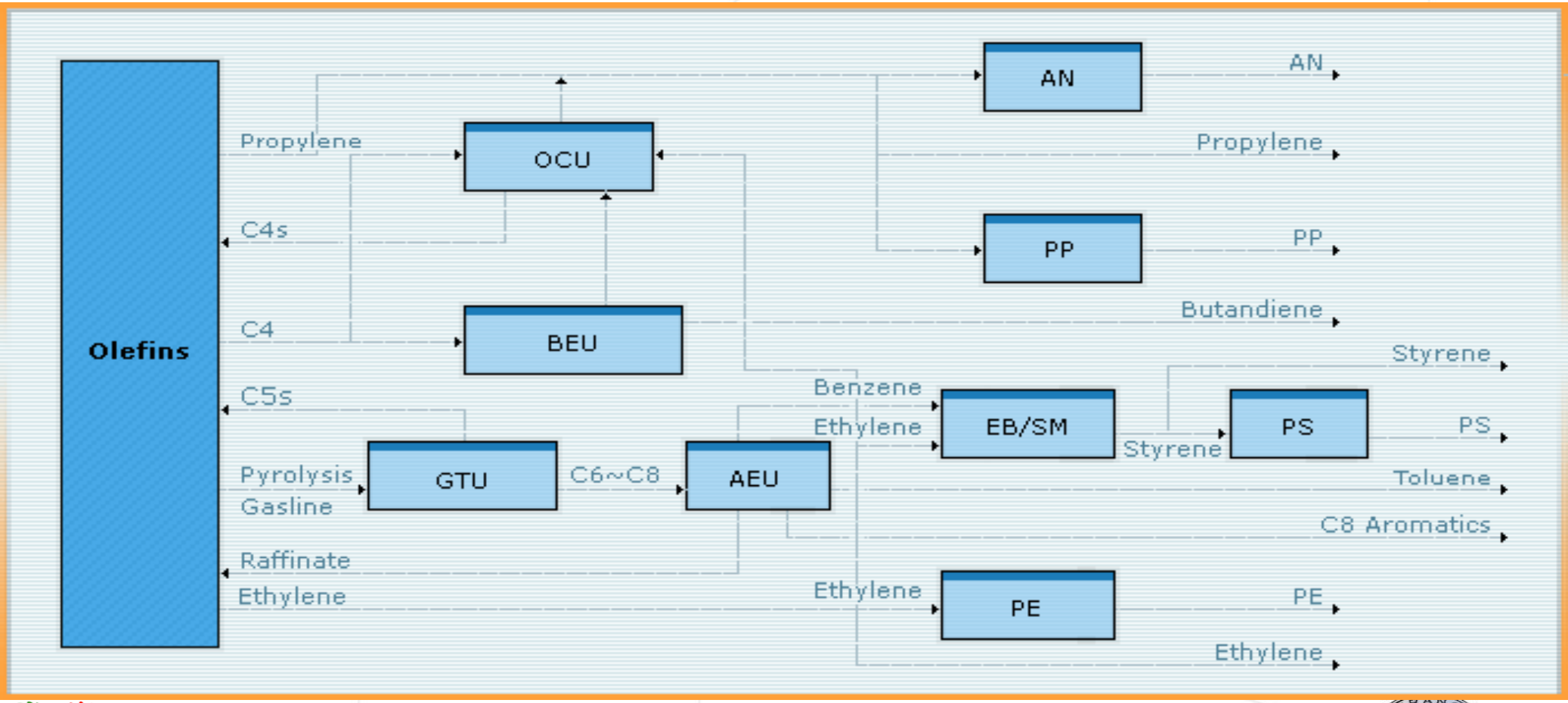
SECCO Process Overview



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Object of PMIS

- Support the key business processes and functions associated with SECCO operations in the next 2-5 years.
- Provides for an efficient, timely and well coordinated manufacturing management
- Allows for logistics and distribution to better schedule their storage tank and feedstock delivery timing
- Accurate and timely calculation of costs of production
- Integrates common resources with best practice processes enabled, achieve greater cost savings
- Eliminates barriers between various operating functions through greater sharing of information resources

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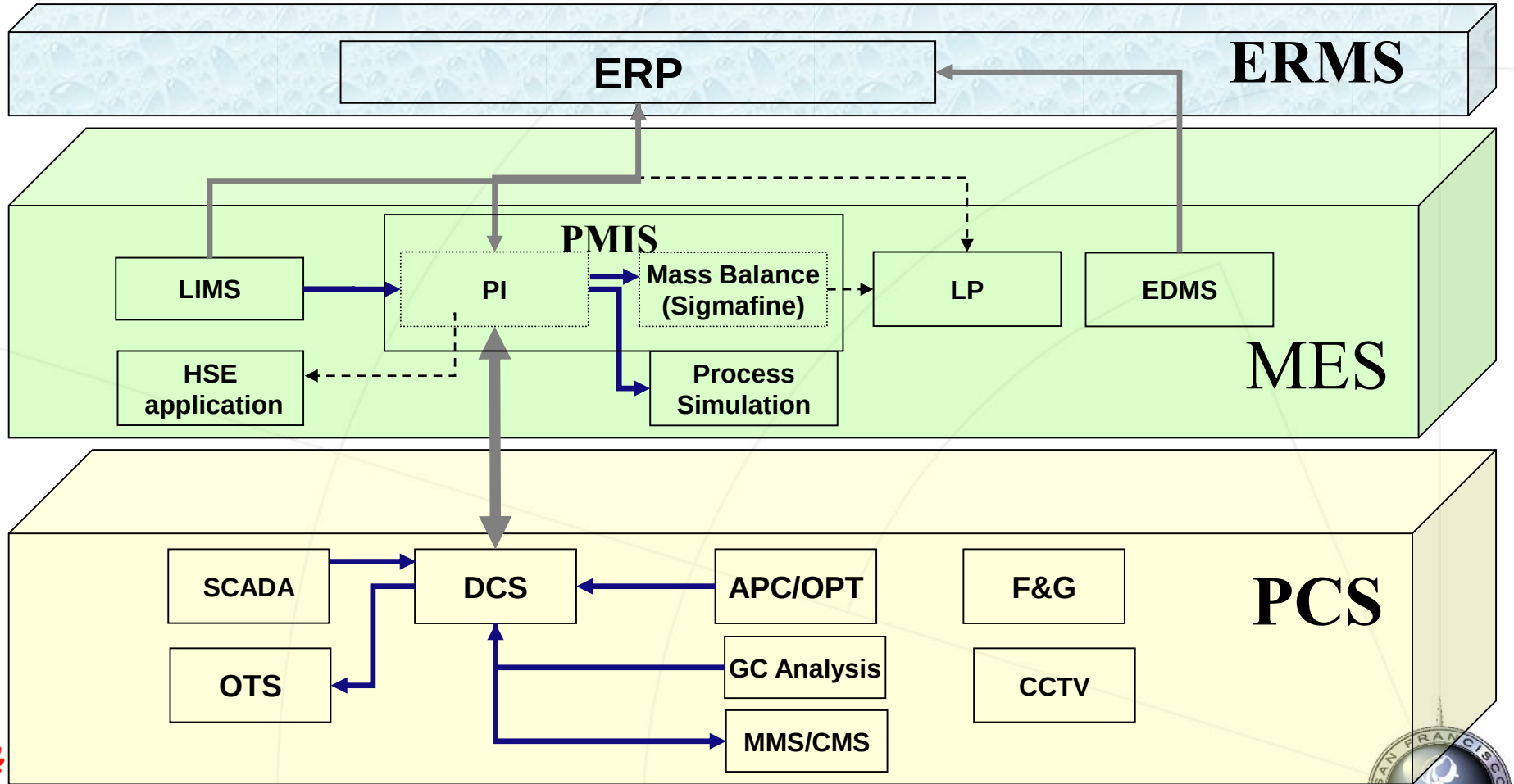
SECCO Application Architecture (now)



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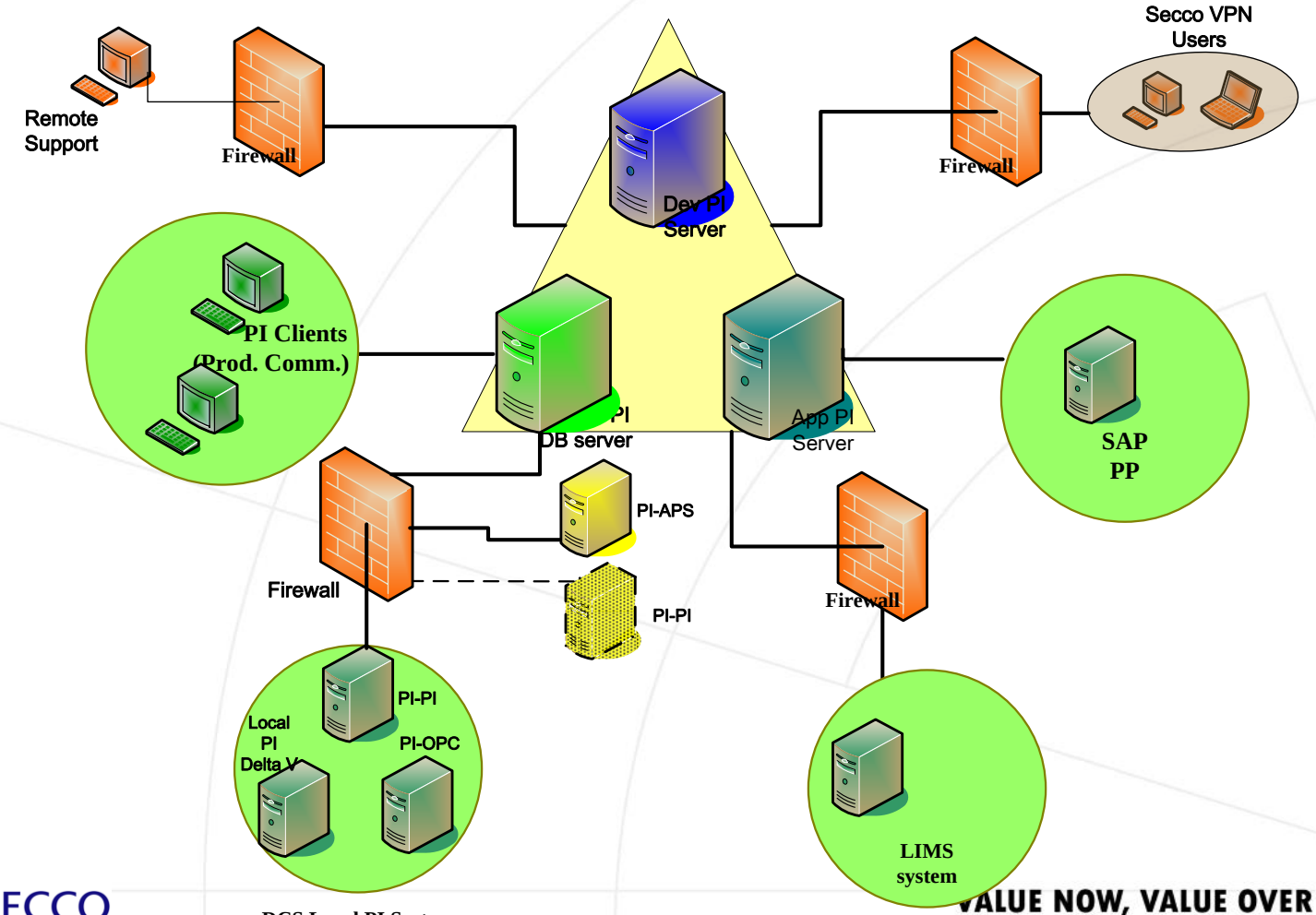
PI System Infrastructure



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Main Page of PMIS

- MS SharePoint is used as a central repository to share the main graphics and reports

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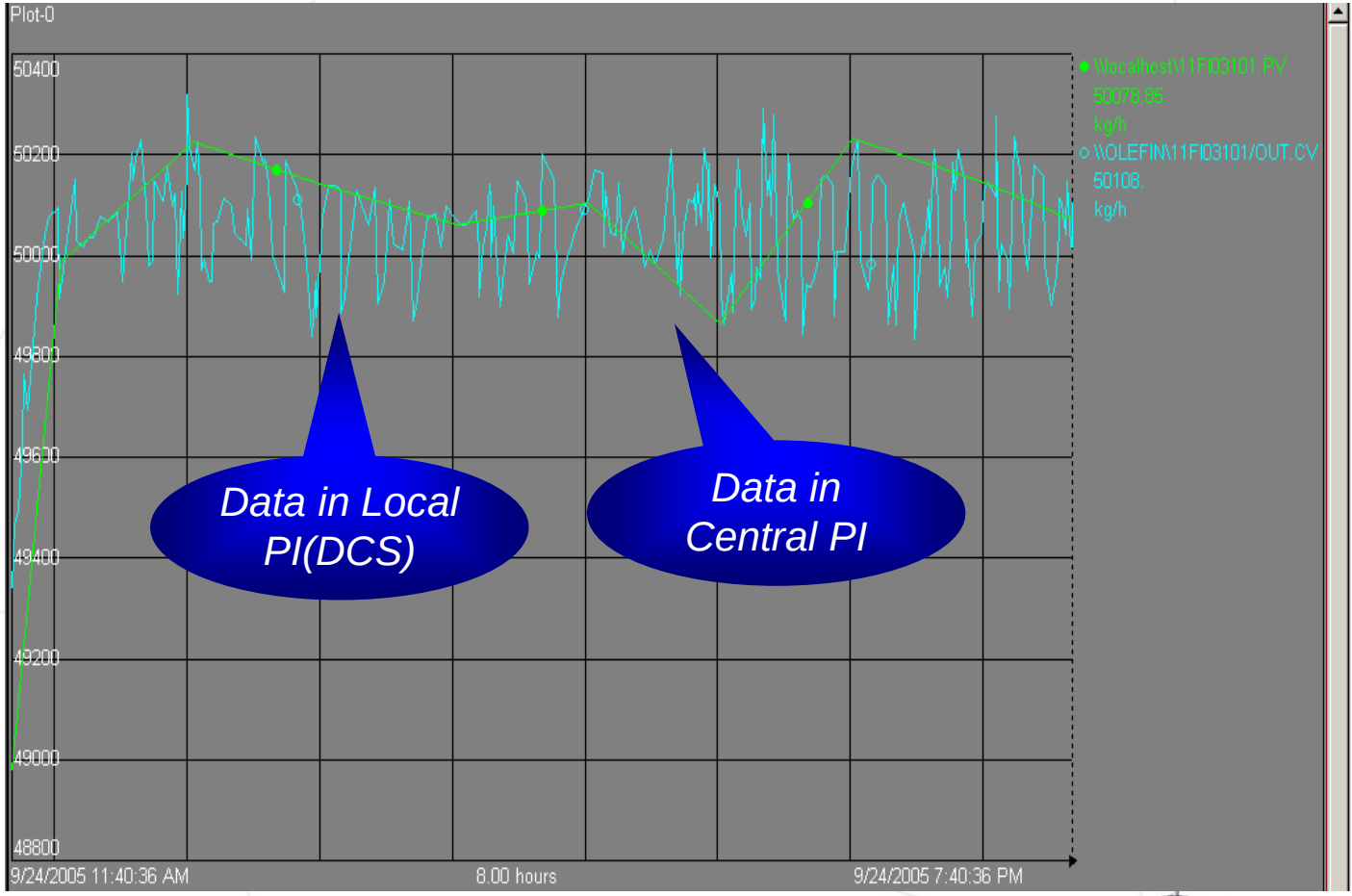
Different between Local PI and DCS

- Owing to different function demand, the ‘compressing’ is different in Local PI (DCS) and Central PI



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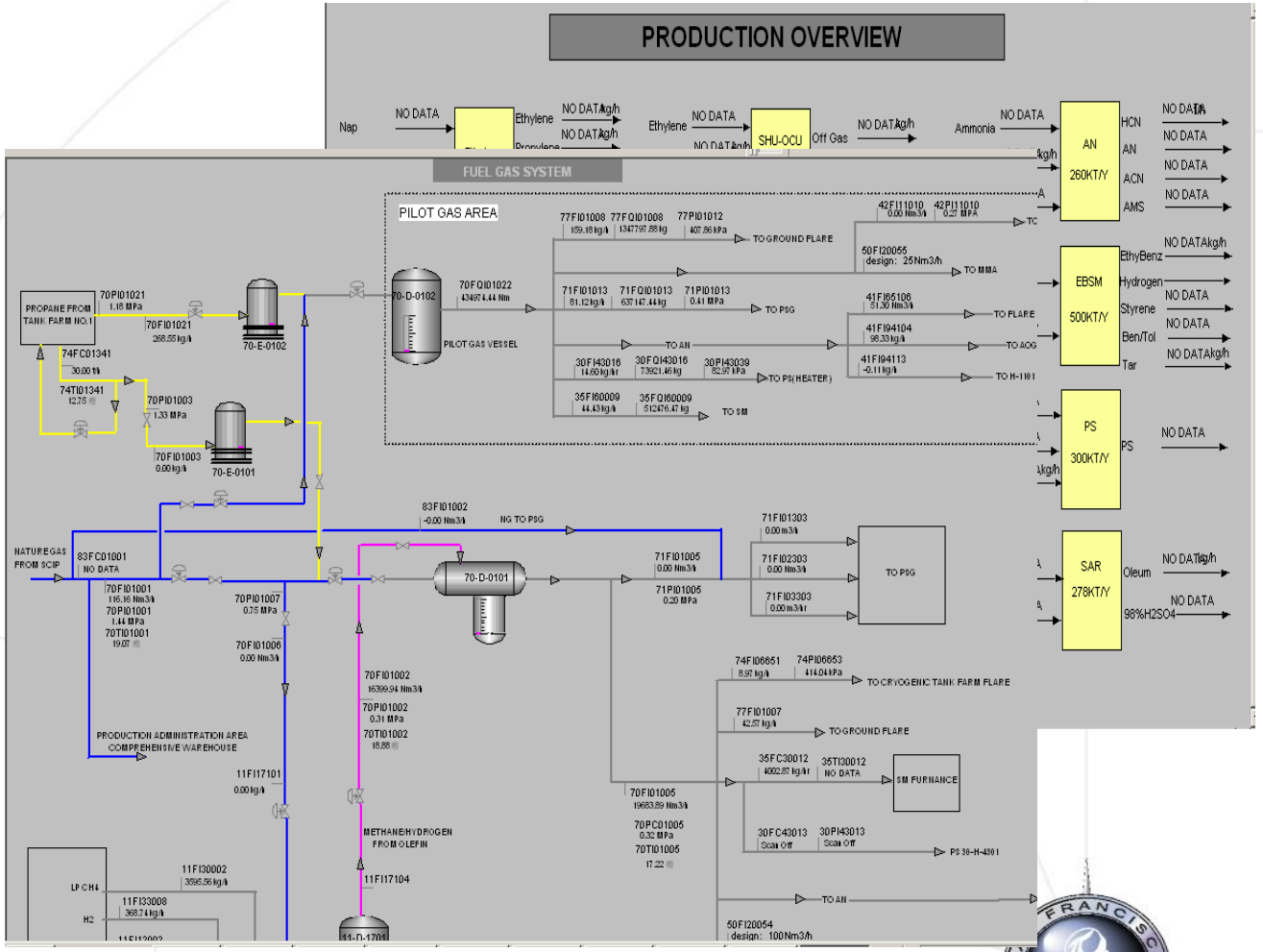
Graphics on ProcessBook

- Near 400 graphics have been developed. Through these graphics, engineers can check or analysis plant operation on ProcessBook same as on DCS



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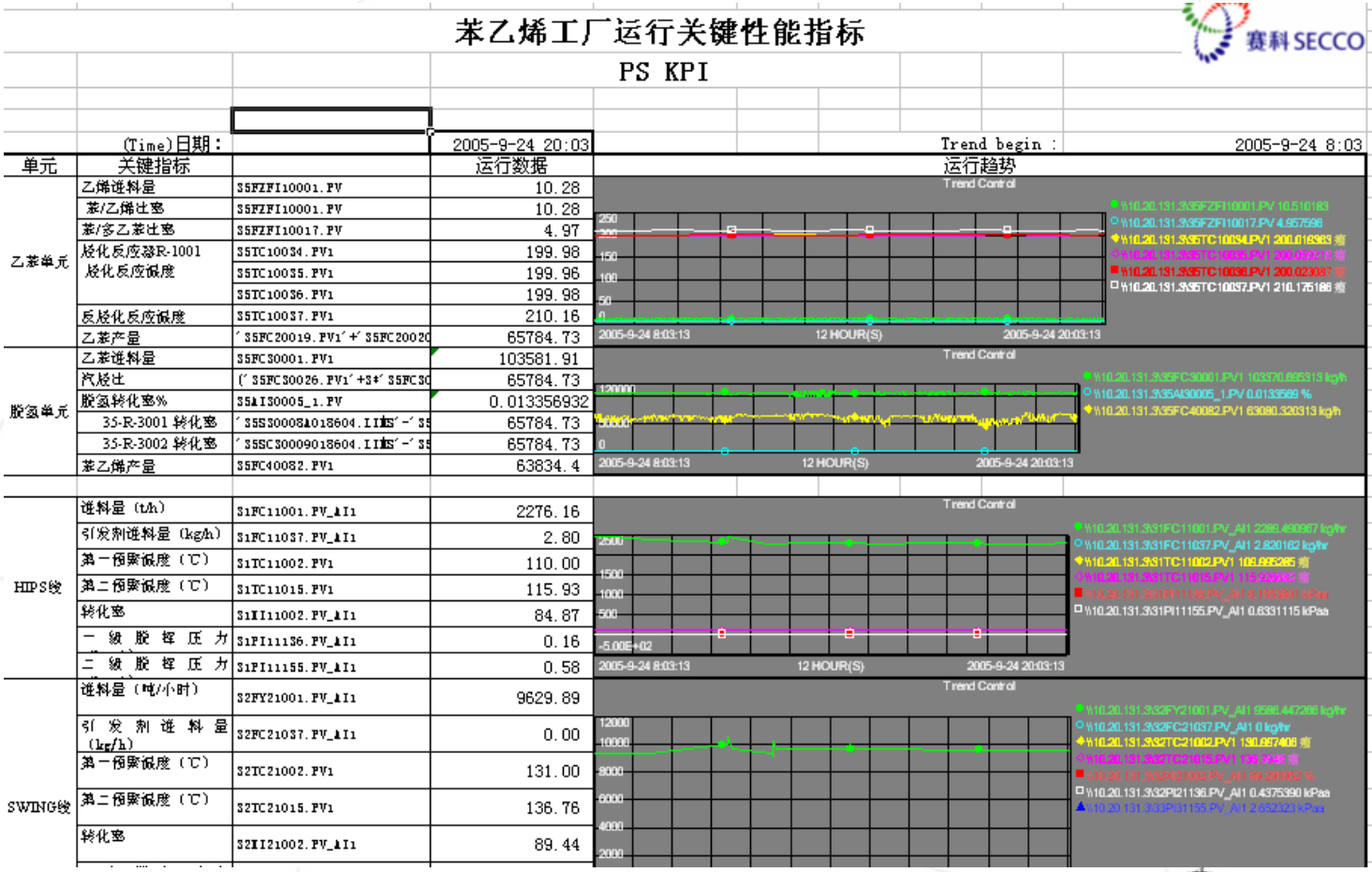
Report and Analysis

- Production report, production log and production analysis are implemented on DataLink



苯乙烯工厂运行关键性能指标

PS KPI

	(Time)日期：		2005-9-24 20:03	Trend begin :	2005-9-24 8:03
单元	关键指标		运行数据	运行趋势	
乙苯单元	乙烯进料量	S5FZFI10001.PV	10.28	Trend Control	
	苯/乙烯比率	S5FZFI10001.PV	10.28		
	苯/多乙苯比率	S5FZFI10017.PV	4.97		
	烃化反应器R-1001 烃化反应温度	S5TC10034.PV1	199.98		
		S5TC10035.PV1	199.96		
		S5TC10036.PV1	199.98		
	反烃化反应温度	S5TC10037.PV1	210.16		
	乙苯产量	'35FC20019.PV1'+'35FC20020	65784.73		
脱氢单元	乙苯进料量	S5FC30001.PV1	103581.91	Trend Control	
	汽烃比	('35FC30026.PV1'+3+'35FC30	65784.73		
	脱氢转化率%	S5AI30005_1.PV	0.013358932		
	35-R-3001 转化率	'35S30008A018604.IIM5'-'35	65784.73		
	35-R-3002 转化率	'35SC30009018604.IIM5'-'35	65784.73		
	苯乙烯产量	S5FC40082.PV1	63834.4		
HIPS线	进料量（t/h）	S1FC11001.PV_AI1	2276.16	Trend Control	
	引发剂进料量（kg/h）	S1FC11037.PV_AI1	2.80		
	第一预聚温度（℃）	S1TC11002.PV1	110.00		
	第二预聚温度（℃）	S1TC11015.PV1	115.93		
	转化率	S1II11002.PV_AI1	84.87		
	一级脱挥压力	S1PI11136.PV_AI1	0.16		
	二级脱挥压力	S1PI11155.PV_AI1	0.58		
SWING线	进料量（吨/小时）	S2FY21001.PV_AI1	9629.89	Trend Control	
	引发剂进料量（kg/h）	S2FC21037.PV_AI1	0.00		
	第一预聚温度（℃）	S2TC21002.PV1	131.00		
	第二预聚温度（℃）	S2TC21015.PV1	136.76		
	转化率	S2II21002.PV_AI1	89.44		

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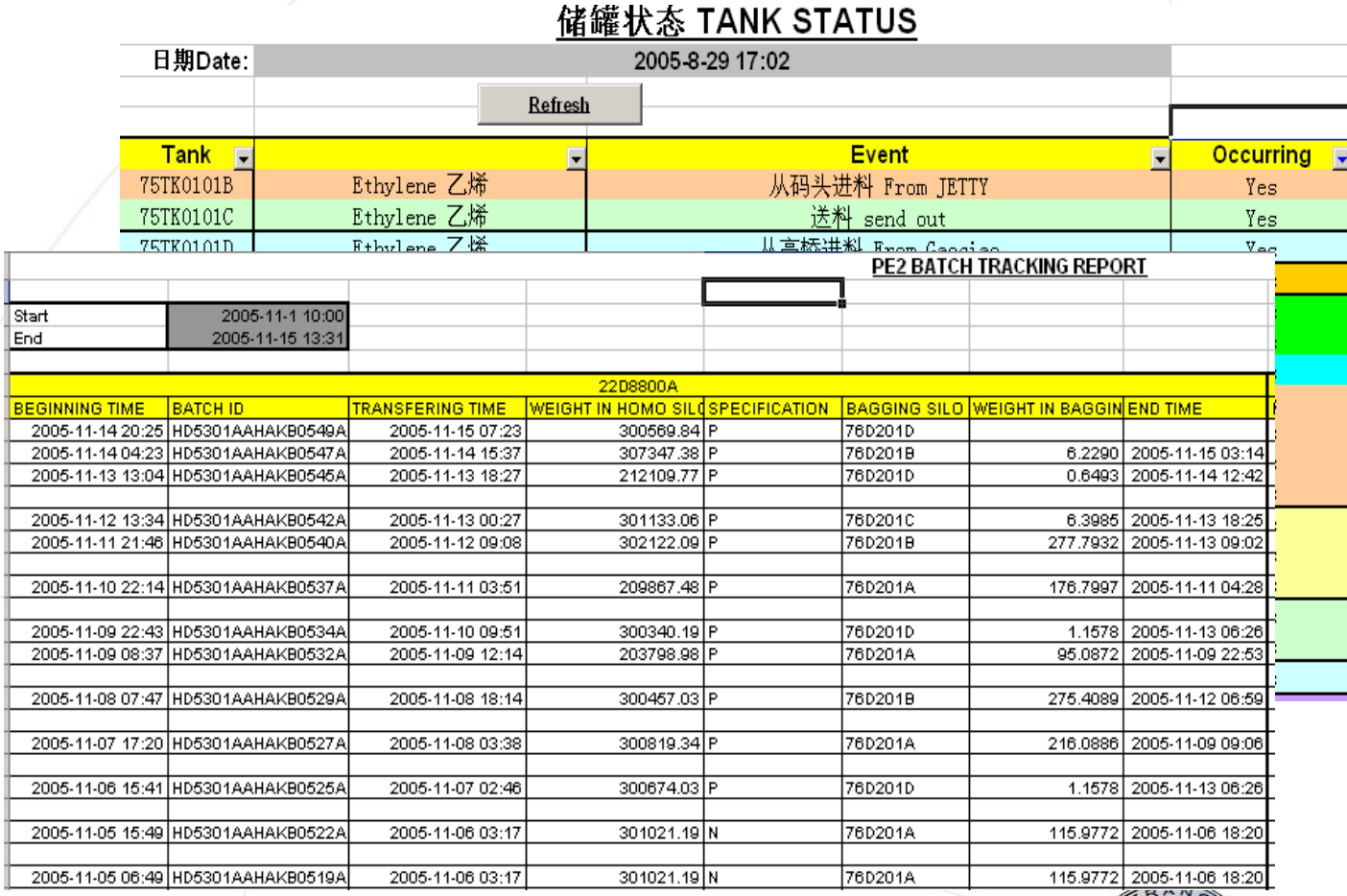
Inventory and Batch Tracking

- Inventory tracking include inventory calculation and tank status tracking. Batch tracking is tracked time, specification and quantity according to information of DCS, PI and LIMS



储罐状态 TANK STATUS

日期Date:	2005-8-29 17:02		
	Refresh		
Tank		Event	Occurring
75TK0101B	Ethylene 乙烯	从码头进料 From JETTY	Yes
75TK0101C	Ethylene 乙烯	送料 send out	Yes
75TK0101D	Ethylene 乙烯	从高桥进料 From Gaoqiao	Yes

PE2 BATCH TRACKING REPORT

Start	2005-11-1 10:00
End	2005-11-15 13:31

22D8800A

BEGINNING TIME	BATCH ID	TRANSFERING TIME	WEIGHT IN HOMO SILO	SPECIFICATION	BAGGING SILO	WEIGHT IN BAGGIN	END TIME
2005-11-14 20:25	HD5301AAHAKB0549A	2005-11-15 07:23	300569.84	P	76D201D		
2005-11-14 04:23	HD5301AAHAKB0547A	2005-11-14 15:37	307347.38	P	76D201B	6.2290	2005-11-15 03:14
2005-11-13 13:04	HD5301AAHAKB0545A	2005-11-13 18:27	212109.77	P	76D201D	0.6493	2005-11-14 12:42
2005-11-12 13:34	HD5301AAHAKB0542A	2005-11-13 00:27	301133.06	P	76D201C	6.3985	2005-11-13 18:25
2005-11-11 21:46	HD5301AAHAKB0540A	2005-11-12 09:08	302122.09	P	76D201B	277.7932	2005-11-13 09:02
2005-11-10 22:14	HD5301AAHAKB0537A	2005-11-11 03:51	209867.48	P	76D201A	176.7997	2005-11-11 04:28
2005-11-09 22:43	HD5301AAHAKB0534A	2005-11-10 09:51	300340.19	P	76D201D	1.1578	2005-11-13 06:26
2005-11-09 08:37	HD5301AAHAKB0532A	2005-11-09 12:14	203798.98	P	76D201A	95.0872	2005-11-09 22:53
2005-11-08 07:47	HD5301AAHAKB0529A	2005-11-08 18:14	300457.03	P	76D201B	275.4089	2005-11-12 06:59
2005-11-07 17:20	HD5301AAHAKB0527A	2005-11-08 03:38	300819.34	P	76D201A	216.0886	2005-11-09 09:06
2005-11-06 15:41	HD5301AAHAKB0525A	2005-11-07 02:46	300674.03	P	76D201D	1.1578	2005-11-13 06:26
2005-11-05 15:49	HD5301AAHAKB0522A	2005-11-06 03:17	301021.19	N	76D201A	115.9772	2005-11-06 18:20
2005-11-05 06:49	HD5301AAHAKB0519A	2005-11-06 03:17	301021.19	N	76D201A	115.9772	2005-11-06 18:20

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Benefits From Sigmafine

- Monitor and reduce meter maintenance
- Measurement stewardship
- Monitor plant performance
- Identify operations problems
- Loss identification and tracking
- Plan versus reconciled comparison

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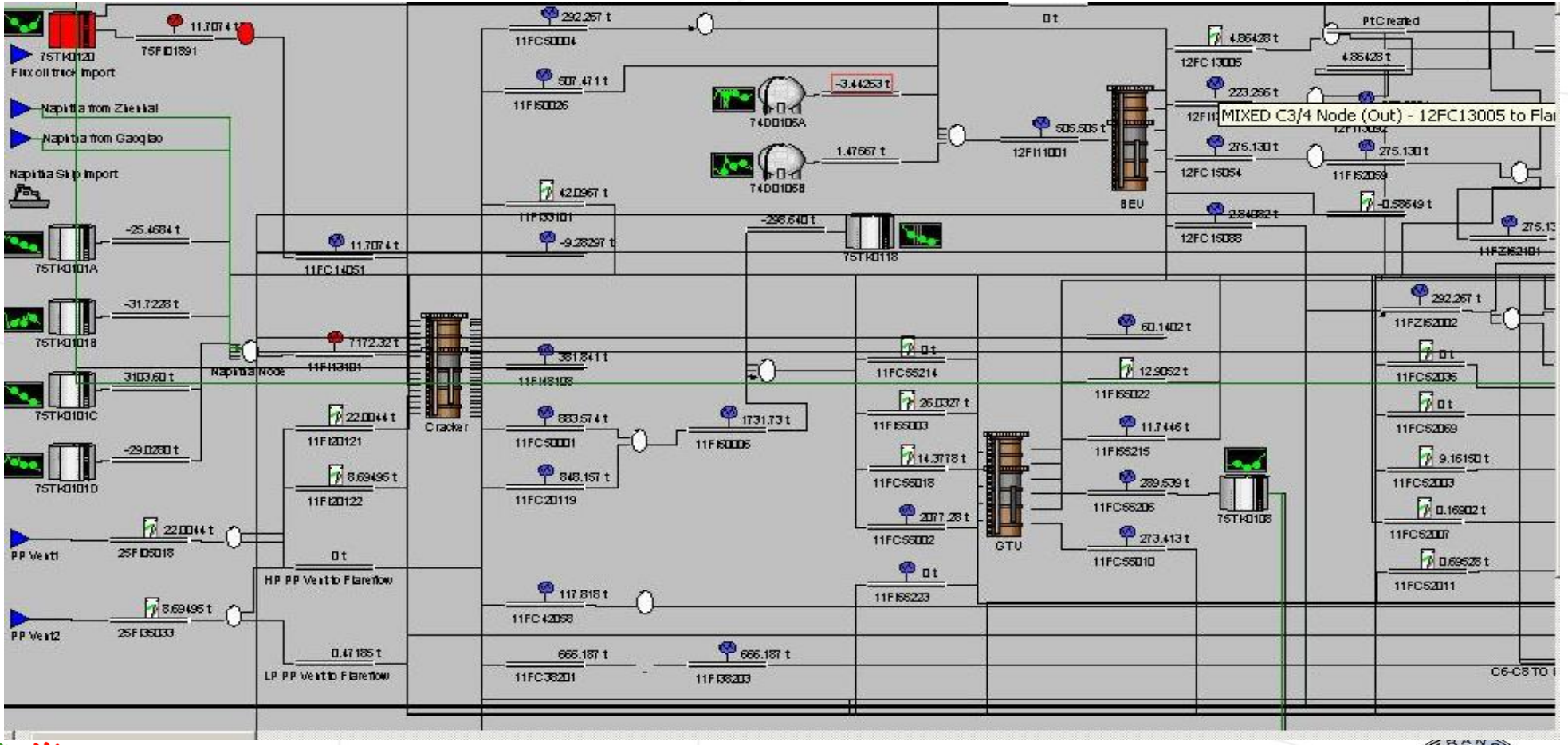
Sigmafine Model



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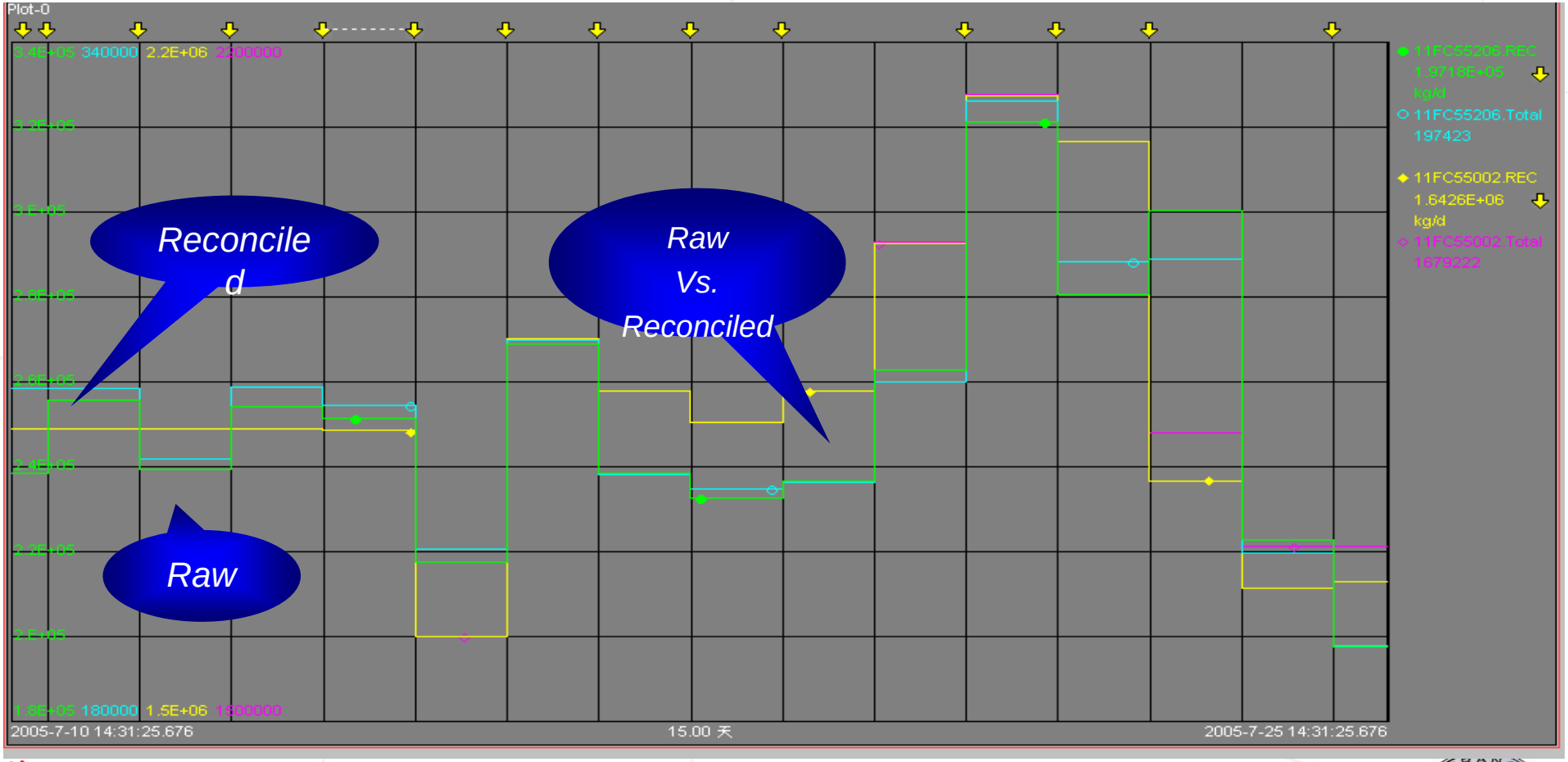
Raw vs. Reconciled



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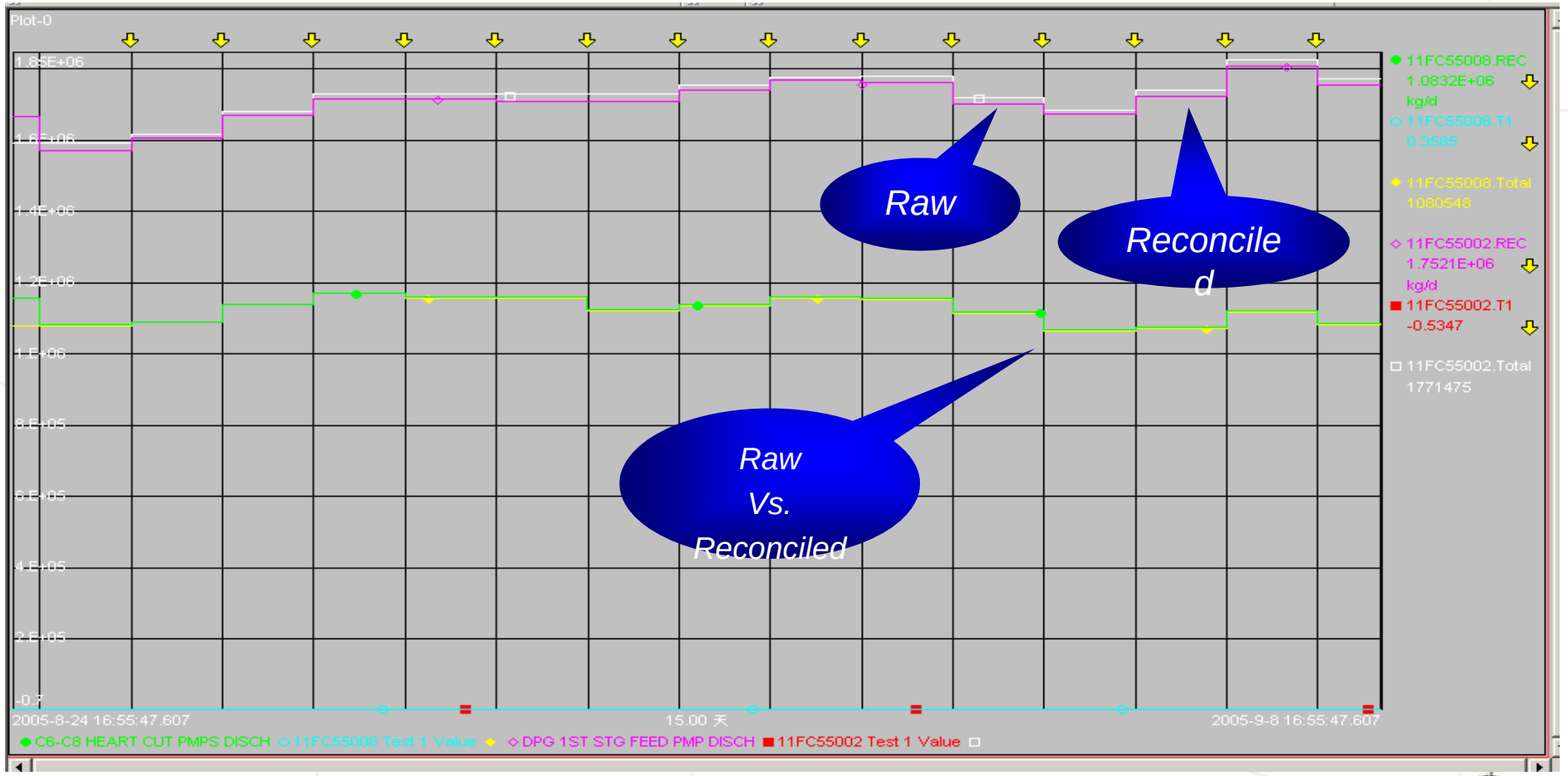
Raw vs. Reconciled



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Example of SF benefit

Through SF daily running, we noticed the Hydrogen mass difference between our supplier and SECCO was increased significantly from Dec.5th, after examining from operation, a safety valve abnormal release was found behind our boundary meter. It prevented material waste, also avoided HSE near miss.

Date	SCIPIG meter	SECCO inside meter		Diff.
	83FI05001A.PV	20FI21001.PV	25FI05003.PV	
2005-12-1 0:00	316	243	52	21
2005-12-2 0:00	288	215	52	20
2005-12-3 0:00	187	109	51	26
2005-12-4 0:00	217	125	49	42
2005-12-5 0:00	349	87	33	229
2005-12-6 0:00	333	84	25	224
2005-12-7 0:00	467	219	27	221
2005-12-8 0:00	432	218	7	207
2005-12-9 0:00	435	230	2	203
2005-12-10 0:00	370	140	20	210
2005-12-11 0:00	511	273	25	213
2005-12-12 0:00	500	253	26	221
2005-12-13 0:00	482	238	23	221
2005-12-14 0:00	354	171	2	181
2005-12-15 0:00	812	609	20	184
2005-12-16 0:00	389	225	25	139
2005-12-17 0:00	165	123	24	19
2005-12-18 0:00	168	128	21	19
2005-12-19 0:00	151	123	13	15

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Next Step…

- Integrate of Machinery/Condition Monitoring System
- Enhanced SAP Interface
- Process Templates/Profile Management ,
- Integration of Engineering Documentation
- Advanced KPI tracking and reporting
- Batch genealogy

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SECCO SCENE

赛科部分装置晨景
Morning Scapes of some SECCO units

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SECCO SCENE

赛科夜景图
SECCO Nocturne

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