SEMICAD

UNE MARQUE DE EQUANS

FIT-UP & HOOK-UP ENGINEERING DEPARTMENT

Design studies and Follow-up of process equipments installations and erections in Cleanrooms and Laboratories

- « Fit-up »
- « Hook-up »

EQUANS, *SEMICAD*
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To the attention of :
The Technical and Engineering Manager

Object: Enginnering services proposal – Design studies and Follow-up of process equipments installations and erections in Cleanrooms and Laboratories

Dear Sir,

Nowadays the industrialization of your products or processes requires production equipments which become more and more technically complex and fairly large. These equipments require specific fluids, gaz, electricity, etc… technical networks which are all trapped in confined spaces (workshops, cleanrooms, laboratories, etc…) having some very strong and high requirements.

Long years of experience in equipments fluids connections studies (« **Fit-up** » and « **Hook-up** ») in the Microelectronics field with reputable customers such as ***THALES RT*** (200 connected equipments in 2004), ***STMicroelectronics*** (3000 connected equipments since 1992), ***CEA LETI*** (70 connected equipments in 2004), ***MINATEC*** (90 connected equipments in 2006) and in the Pharmaceutical field (***SANOFI***, ***MERIAL***, **Etc…**), the **SEMICAD Department** manage the studies and the follow-up of the installation of your process equipments inside your production environment.

On the strength of its 40 engineers, draftsmen and technicians using high-performance computer tools (**PDMS, AUTOCAD, NISA, FLOWMASTER, CAESAR, CLIMAWIN, Etc...**) and having strong expertise and necessary know-how to manage the equipments implementation, **SEMICAD** is proud and honored to offer to you its Engineering services for your upcoming projects with a logic and proven design methodology. This process will guaranty the running of your production equipments from the very first stage (Manufacturers specifications) through the design till the equipments installation with the fluids tests. This methodology (sketch-up hereafter) is described here-below:

- Feasibility studies, Equipments basic design considering the environment and technical constraints « **Space Management** », Elaborating in-coming new equipments schedules, Equipments costs estimation,
- Elaborating equipments layout drawings « **Lay-out** » and 3D piping routing drawings « **Fit-up** »,
- For each equipment and based on the Manufacturers datas and specifications, connected fluids schematics « **P&ID** » and electrical diagrams will be performed, Elaborating materials specifications,
- 3D design studies of every connected fluids on each equipment « **Hook-up** » (if required, hydraulic pressure drop calcs) with complete isometric drawings (for manufacturing),
- Dimensioning of equipments chassis and supports with their execution drawings,
- Elaborating Equipment Design Package required to implement and hook-up equipments in their production area,
- Project economic follow-up, Coordination and monitoring of works (from installers) and verification of respect for work schedule,
- Organization and/or Follow-up of handling operations, Commissioning, Management of tests and fluids in-charge of the equipments, Acceptance report
- Validations of installers as-build drawings and handing-out an As-Build 3D model with all the installed equipments in order for you to manage more efficiently the operating and the maintenance of your entire production.

Convinced that our services may suit your company and your future projects, I will call you to discuss in detail about a possible partnership.

Sincerely yours,

Yoann SESTIER
SEMICAD Commercial Development Manager
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06 61 11 01 35

❖ **Equipments Data – Fluids needs, Geometry, Maintenance Volume, etc…**

❖ **Environment Data - Allowable space, networks capacities, etc…**

Facilities Data sheet : 16 June 2003

Tool ID: L193S03 Supplier: Crolles2
Workshop: Model: AT 1200B
Function: SN :

Data are extracted from "AT 1200 Installation Requirements Manual (IRM) ", updated on 26 of May 2003.
The IRM keeps the ASML reference document.
* New information

MainFrame
fluid matrix

ID	Fluid Service	Name	Flow max	units	Flow Idle	units	Pressure	units	Co
34	Air Comprime Sec	ACS			3330	l/mn	8,5 - 10	bar	1.1/
35	Vide reseau	VP			100	l/mn	-0,7	bar	3/4"
31	Lens and Nitrogen gas	N2P			6,1	m3/h	6,5 (+- 0,3)	bar	1/2"
102	Eau desionisee aller	EDIA	25	cc/hr	0 - 25	cc/hr	3 - 5	bar	1/4"
103	Extreme Clean Dry Air	XCDA			250	l/mn	> 4 (10 max)	bar	1/2"

Subassembly
fluid matrix

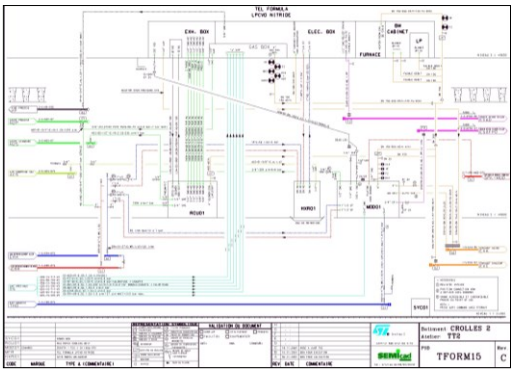
ID: LCWC (HXR01)

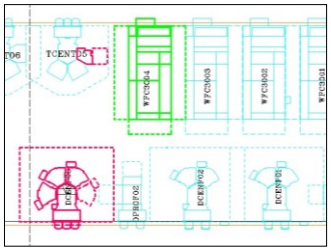
ID	Fluid Service	Name	Flow max	units	Flow Avg	units	Pressure	units	Co
49	Air Comprime Sec	ACS			4	l/mn	4 - 10	bar	1/2"
45	Eau refroidissement aller	ERA			45 (at PCWC temp fab = 16dC)	l/mn	8 Maxi	bar	1.1/

Equip	Machine 200mm	Nom workstrea m 300 mm	Nbre	Zone	Workshop	Yp	Scom	Volts / Amps	Power	EDI l/mn	ERA l/mn	THO l/mn	SiH4 Slm	H2O2	NH4OH	HF 5%	HF 50%	Slurry Out/Pols	Slurry W
300 mm	SWIFT						100				650								
300 mm	ASM										350		3						
300 mm	RTQ GATE STACK*										50	25	20						
200 mm	KLA 2350						28400												
200 mm	ASET F5X						28400												
AMAT	CMPSIG*	CGICS	5	jaune	CMP	28300				45	34							buffer	
AMAT	CMPCU2*	CCI00-	5	jaune	CMP	28300				45	34								
AMAT	CMPW8	CV100-	2	jaune	CMP					54									
DNS	DSS	VS300-	2	jaune	CMP	60000				12									
	AES1	FP100-	2	jaune	CMP						33								
	ECPCU2*	ME100-	3	jaune	CMP	56000				15	5,7								
	SORTER		1	jaune	CMP														
	STOCKER	ST100-	2	jaune	CMP														
	KLA*	FUPV	2	jaune	CMP	28400													
	TOTAL			jaune	CMP	627800	0	0		627	423,1	0	0	0	0	0	0	#######	0
	DIAMETRE RIT			jaune	CMP	5210	0	0		81	94	0	0	0	0	0	0	#######	
FSI	FSI ZETA* metal etch	VV100-*	1	jaune	TEST	10000				44	8								
	FSI ZETA* oxyde nitrure	VV300-	1	jaune	TEST	10000				44	8								
	DSS	VS200-	3	jaune	TEST	60000				12									
	AES1	FP100-	1	jaune	TEST						33								
	SORTER		1	jaune	TEST														
	STOCKER	ST100-	2	jaune	TEST														
	TESTEUR	XT100-	3	jaune	TEST														
	PROBER	XP100-	5	jaune	TEST														
	KLA		2	jaune	TEST														
	TOTAL			jaune	TEST	200000	0	0		124	49	0	0	0	0	0	0	0	0

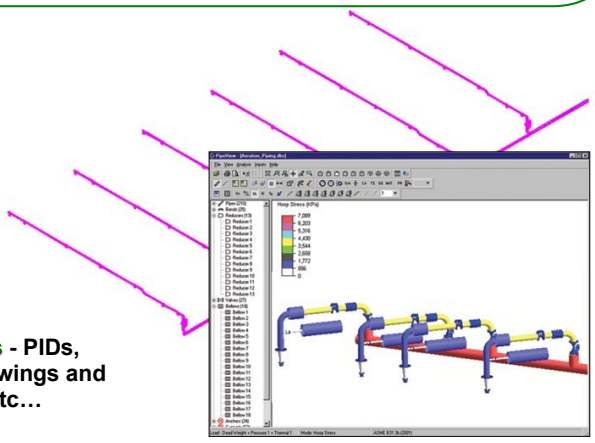
Equipments Technical Specifications (Energy needs)

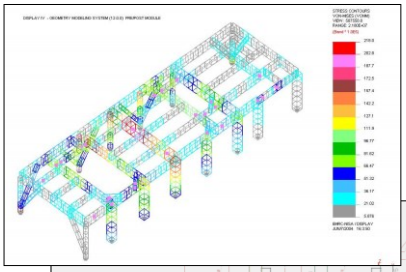
Fluids Matrix (Viabilities)

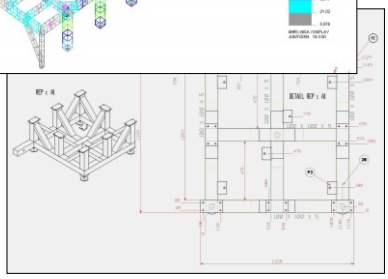




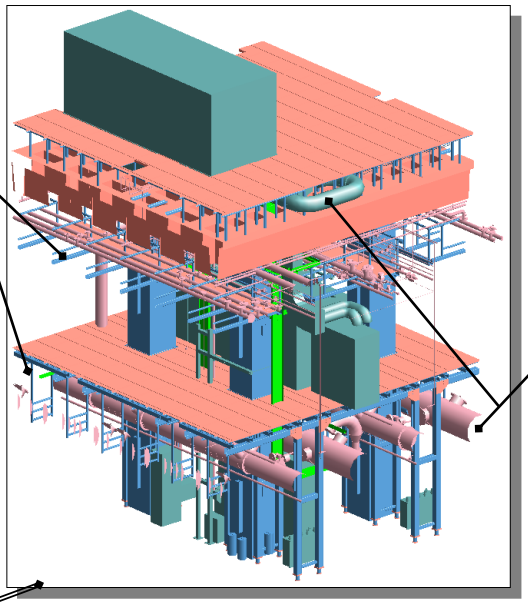
❖ **SEMICAD Design Documents - PIDs, Electrical diagrams, Lay-out, Drawings and Networks dimensioning, Fit-up, etc…**



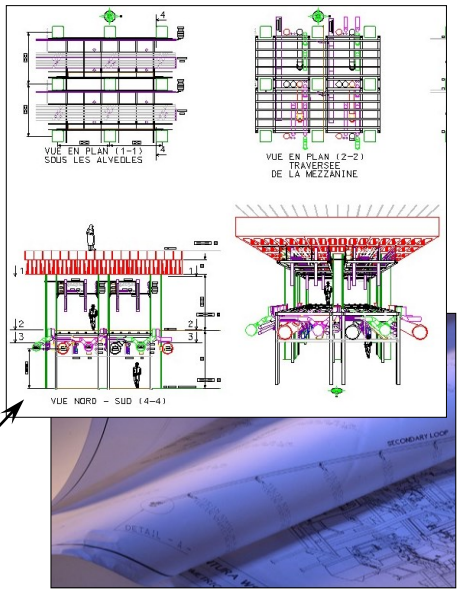




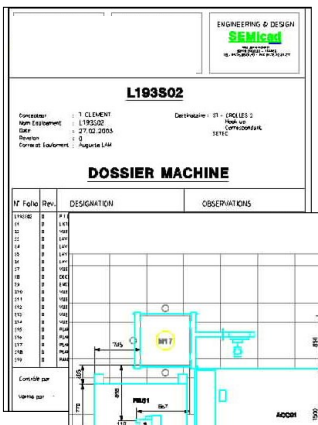
❖ **Mechanical Studies - Equipments Chassis, ceilings, partition walls, networks supports, etc…**

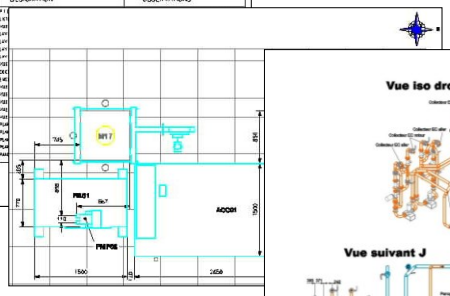


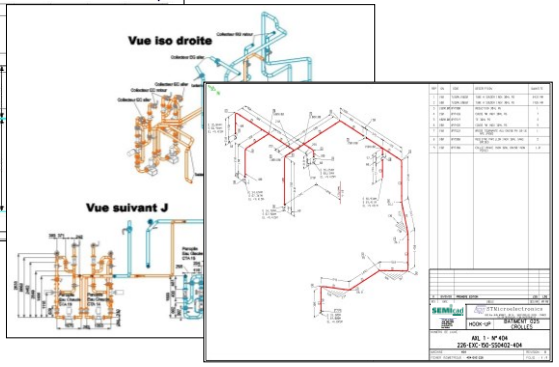
* Typical Equipment design - 3D model performed with **PDMS**



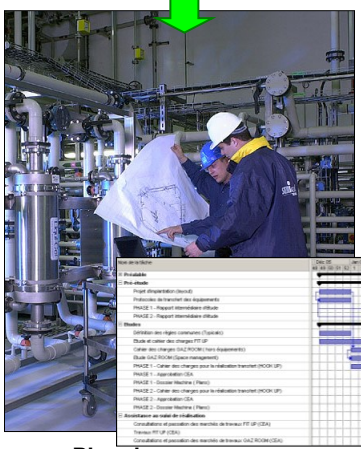
❖ **Networks drawings - 3D views, Detailed design, etc…**







❖ **Equipments Design package - Detailled Layout, isometrics, hook-up, etc…**



❖ **Work Follow-up- Planning, Verification, Tests, Fluids charge, As-Build Validation, etc…**

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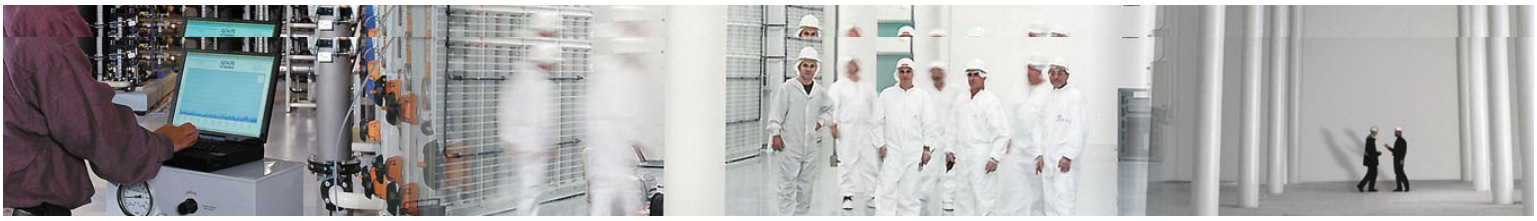

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