



**DESIGN
PROCESS
EQUIPMENT
AUTOMATION
ENGINEERING
PROCUREMENT
PROJECT MANAGEMENT
COMMISSIONING
CONSULTING
VALIDATION**

**THE ONLY WAY
AROUND IS
THROUGH**

"Robert Frost"

εμα **ENGINEERING**



Trust Me! We are Engineers

We are committed to be your brain, eye and heart designing and bring the projects and products with our experience in the industry. For EMA employees, Our Promise is our values to ensure we always serve you the best and always aim higher.



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WHO WE ARE

Our imagination is the only limit to what we can hope to have in the future
- Charles F. Kettering

EMA Engineering is a global engineering and equipment supply company that assists pharmaceutical, advanced bio & chemical industry. We are specialized in process and equipment design, project management and C&Q activities. We are committed to act as your advisors by providing the optimal alternatives to help you to make the best decisions. For EMA employees, our Promise is to serve you the best.

Our Value



“

Our Promise is our value to ensure we serve you the best and always aim higher.

President

”

BEST SOLUTIONS



Our company

EMA Engineering manages a range of projects in the field of process and engineering. Our engineering team forms an immensely important part of the strategic development of the business and these process engineering strengths, covering all market sectors, enable us to provide valuable support to our clients at an earlier stage in the development of the project. It's due to this earlier involvement that we can maximize our value to our customers.

Our vision

Our Vision is to excel in Pharmaceutical Engineering field by developing new skills, methods and innovating new solutions to respond to changing needs of clients and markets.

Our mission

Our Mission is to be the best performing design and construction firm in planning, designing, building and commissioning processes and facilities in pharma, chemical and alternative energy industries. Quality, Safety and Environment are our core values.



PROCESS DESIGNING CONSULTING ENGINEERING

PROJECT MANAGEMENT

- 1- COMMUNICATION
 - Tactics → WORK TEAMS
- 2- DEVELOPMENT
 - Design
 - Process
- 3- COMPLETION
 - Testing → CUSTOMER
 - Marketing
 - Delivery

ANALYSIS

QUALITY

GROWTH

VALUES

ACTION

MISROW

	MON	TUE
8 AM	W.R.	
9 AM		CHANGE MEETING
10 AM		TRAINING
11 AM		
12 PM	TRAINING	
1 PM		
2 PM		
3 PM		

THE PROCESS ENGINEERING

If you can't describe what you are doing as a process, you don't know what you're doing. — Edwards Deming

What we are doing

THE FUTURE



QUALITY FIRST

The toughest thing about success is that you've got to keep on being a success. —

Irving Berlin.

Our Knowledge

We approach our projects by first developing an in-depth understanding of the process itself and the goals. These characteristics play a key role in the development of the program.

Our knowledge of the industry allows us to identify the gray areas, and to establish plausible hypotheses for the installation's operational characteristics.

Conceptual phase:

- PFD, BFD and EFDs
- User Requirement Brief (URB)
- Process simulation
- Material and energy balance
- Design development and Layouts

Preliminary design phase

- Preliminary P&ID's
- Development drawings
- Purchasing specifications
- Performance specification

Detail design phase

- Detailed P&ID's
- Installation drawing
- Isometric & 3D drawings
- Installation specifications

Compliance and validation

- Commissioning plan & protocols (FAT, SAT)
- Validation master plan (VMP)
- Standard operating procedures (SOP)
- Quality Manual
- Risk assessments
- Qualification protocol (DQ, IQ, OQ, PQ)

FIELD OF EXPERTISE

A customer is the most important visitor on our premises. He is not dependent on us. We are dependent on him. He is not an interruption in our work. He is the purpose of it. He is not an outsider in our business. He is part of it. We are not doing him a favor by serving him. He is doing us a favor by giving us an opportunity to do so. — Mahatma Gandhi.

Field of Expertise

Optimum solutions is always our top priority. EMA Engineering always provides cost effective, good quality engineered solutions.

1 Bio-process

- Fermentation
- Cell culture
- Inactivation
- Chromatography
- Centrifugation
- Microfiltration, TFF
- Cleaning-in-place
- Sterilization

2 Pharmaceutical

- Aseptic formulation
- Liquid formulation
- Solid formulation
- Aseptic filling
- Solid and liquid filling
- Blister packaging
- Lyophilization
- Packaging
- Insulators

3 Food & beverage process

- Fermentation
- Flash pasteurization
- Evaporation
- Ultrafiltration
- Centrifugation
- Extrusion
- Drying
- Sanitization

4 Active pharmaceutical ingredients

- Reactions
- Distillation
- Filtration
- Centrifugation
- Drying
- Bulk storage
- Solvents

5 Wet-Milling and Glucose Refining Technologies

6 BioEthanol Designing and Technology

7 Equipment Design and Manufacturing

8 Project Management

9 Process Control, Process Safety, Troubleshooting, Optimization, Simulation, Scheduling and more...

Our Partners

We are stronger with the right partnerships yielding the best results for our clients.



Pharmalab has an integral part of the pharmaceutical machinery and pharmaceutical equipment manufacturing and serving the industry since 1962 with more than 3000 references worldwide.



Ganson manufactures a wide range of process equipment for pharmaceutical, food and chemical industry since 1947.



DPS Engineering is a leading Project Management and Engineering Company serving industry around the world for 40 years.



We provide worldwide solutions





We manage a range of projects in the field of process and engineering.

USA/CA

**North America Operations:
Process Design & Equipment Sales**

Consulting
Engineering
Project Management
Commission and Qualification

TURKEY

**Turkey Operations:
Process Design & Equipment Manufacturing**

Consulting & Engineering
Project Management
Equipment and Component supply
Software
Validation

INDIA

**India Operations:
Raw Materials and Equipment**

Trouble shooting
Procurement
Administration
Supply Management
Partnership between Buyer and Supplier

WORLDWIDE EXPERIENCES, SOLUTIONS and LOCATIONS

Intelligen, Inc.

Intelligen is the leading supplier of simulation and design tools for the biotech, specialty chemical, pharmaceutical, mineral processing, and food and consumer goods industries.

Software Solutions

- ▶ SuperPro Designer®
- ▶ SchedulePro®

SuperPro Designer® is to model, evaluate, and optimise single product processes.

SchedulePro® is a finite capacity scheduling (FCS) tool for batch and semi-continuous manufacturing processes.



**WE ALL HAVE
ABILITY...
THE
DIFFERENCE IS
HOW WE
USE IT**

Some of Our References





OUR PRODUCTS

The most incomprehensible thing about the world is that it is at all comprehensible.
- Albert Einstein

We provide the best quality bioprocess equipment and components

We are distributor of world class engineered equipment, clean and aseptic valves, high quality advance magnetic drives, pumps and fittings.

1 BioProcess & Pharma Systems

- Fermentation Systems
- Media Preparation Systems
- Downstream Proces Tanks
- Aseptic Process Systems
- Inactivation System
- CIP / SIP Systems
- Mobile Tanks, Pressure Vessels,
- Filter Housings
- Agitated Pan Driers,
- Agitated Horizontal Driers,
- GMP Lift
- Oinment Plant
- Viscomills
- Freeze Dryer, Lyofilizator
- and so on...

2 Water Systems

- Purified Water Systems (PW)
- Water for Injection Generation (WFI)
- Pure Steam Generation (PSG)
- Pure Steam Quality Test Kit
- Steam Sampling

3 Sterilezers

- GMP Steam Sterilezers
- Hospital Sterilizer
- Dry Heat Sterilizer
- Rubber Stopper Processor Cum Sterilizer
- Super Heated Water Spray Sterilizer
- Ventilator Sterilizer – Air and Steam Mixture
- Terminal Sterilization
- Vertical Drum Autoclave

4 Solid Pharma Systems

- Granulation Systems
- Tablet Coating Systems
- Powder Mixing Systems
- Particle Sizing and Sifting
- Strip
- CIP / SIP Systems
- Mobile tanks, Pressure Vessels,
- Filter Housings

5 Metenova Magnetic Mixers

- Zero g Technology
- High Power Solid-Liquid Mixing
- High Shear Emulsifier
- Plastic or Alloy Magnetic Mixers
- Zero Shear Levitating Mixers

6 Pumps, Valves and Fittings

- All 316L ASME BPE, FDA, 3A Standards
- Centrifuge, Gear, Lobe, CIP pumps
- Rattiinox Clean and Aseptic Valves
- Diaphragm Valves, Block Valves
- Elfab Aseptic Rupture Disks

7 Liquid, Powder, Filling and Packing Systems

8 Intelligen Process Simulation Software

- Superpro
- Schedulepro

Technology you can trust

Pure Water

WFI Systems

Water Systems

3000+ References Globally

70+ References in Turkey

Pure Steam

Steam Test Kit

Piping Storage Design Installation

Validation

Ointment Systems

Freeze Dryer





Pharmalab

INDIA PRIVATE LIMITED

TECHNOLOGY YOU CAN TRUST

Serving the best since 1962

Steam
Sterilizers

Super-
Heated
Sterilizers

Sterilizers

Ventilator
Sterilizer

Hospital
Sterilizers

Dry Heat
Sterilizers

Sterile
Aseptic
Systems

Robust
Design

Viscomill

Filtration

Packing
Systems

Filter
Press

Lyophilizers



Gansons manufactures a wide range of process equipment for pharmaceutical, food and chemical industry since 1947.

Integrated Granulation Suite

Vacuum Transfers

Tablet Coating System

Validation

Rapid Mixer Granulators

Fluid Bed Dryer

High Shear Mixer Granulators

Lifts

Emulsifier

Dispenser



Dispenser

Octagonal
Blender

Nautamix

Bin
Blender

Double
Cone
Blender

V-type
Blender

Tablet
Coating
System

MultiMill

Planetary
Mixer

Sifter



WHATEVER YOU

**Corrosive
Chemicals**

**Powder &
Vigorous Mixing**

**Emulsification &
High Shear**



ZGP Plastic Magnetic Mixer

ZGP plastic magnetic mixers provide a cost-efficient version of the ZG mixer particularly targeting the chemical applications. This product line is a great alternative to costly high alloy versions for demanding chemical applications.



HP High Power Magnetic Mixer

The High Power HP magnetic mixer with its open design and high power input makes it perfect for breaking down lump forming powders or rapid mixing of buffer solutions



HS High Shear Magnetic Mixer

The efficient rotor stator design in the High Shear HS mixer is ideal for emulsification applications and particle downsizing

mete  nova

PURE INNOVATION

NEED TO MIX

General Mixing

Low Shear



ZG Magnetic Mixer

ZG mixers are very versatile and is the base line of our mixer program. The high efficiency mix head design allows for both effective and gentle mixing at the same time. The ZG mixer covers a vast range of applications all through the process chain.



ZF - Free Floating Magnetic Mixer

The revolutionary ZF with its bearing less fully levitating technology enables a unique design that is perfect for shear sensitive products. This product is our high-end mixer that offers a unique control and measuring capability that can be leveraged in final drug substance holding tanks or bioreactors.



mete nova

Metenova ZF Magnetic Mixer

Highest level of
aseptic design

Fully free
floating mixer

No
Bearing

No wear
parts

No
Shear

Only stainless
steel in
product
contact

No moving
part in the
motor

The Metenova magnetic mixers offer a state of the art patented mixing solution for applications throughout the process line. The excellent aseptic design, materials complying with FDA regulations combined with the benefits of the new and innovative bearing design makes it perfect for use in the pharmaceutical and biotechnology industries

Metenova HS Magnetic Mixer

**Floating
Zero-g
technology**

**Aseptic
design**

**Robust
design**

**Bottom
mounted**

**Magnetically
coupled**

**High
Shear**



Zero Deadleg

Aseptic design

10 Bar
200 °C

Wide Range
to Suit Process
Requirement

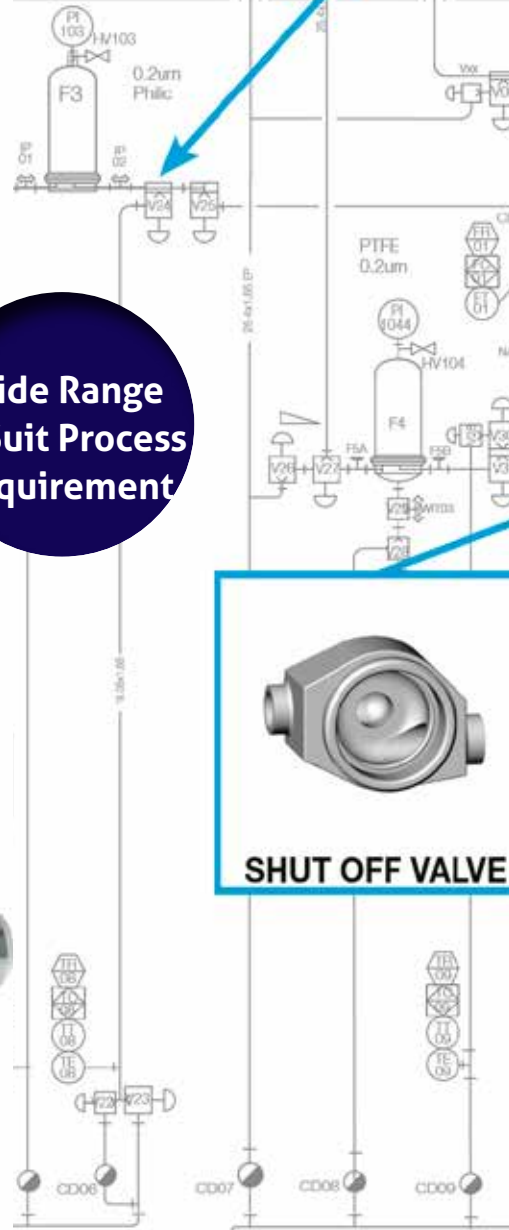


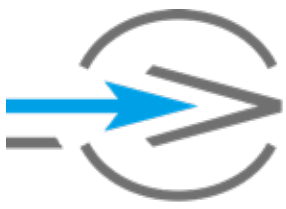
VALVE ON PIPE



SHUT OFF VALVE

N2
6 bar
FFT





RATTIINOX

ASEPTIC EQUIPMENT - DESIGN & SUPPLIER

COP / CIP

Robust Design



DIVERTING VALVE



DEEP TUBE



FLOW THROUGH



TANK OUTLET VALVE



EXTENDED TC CONNECTABLE



FILLING

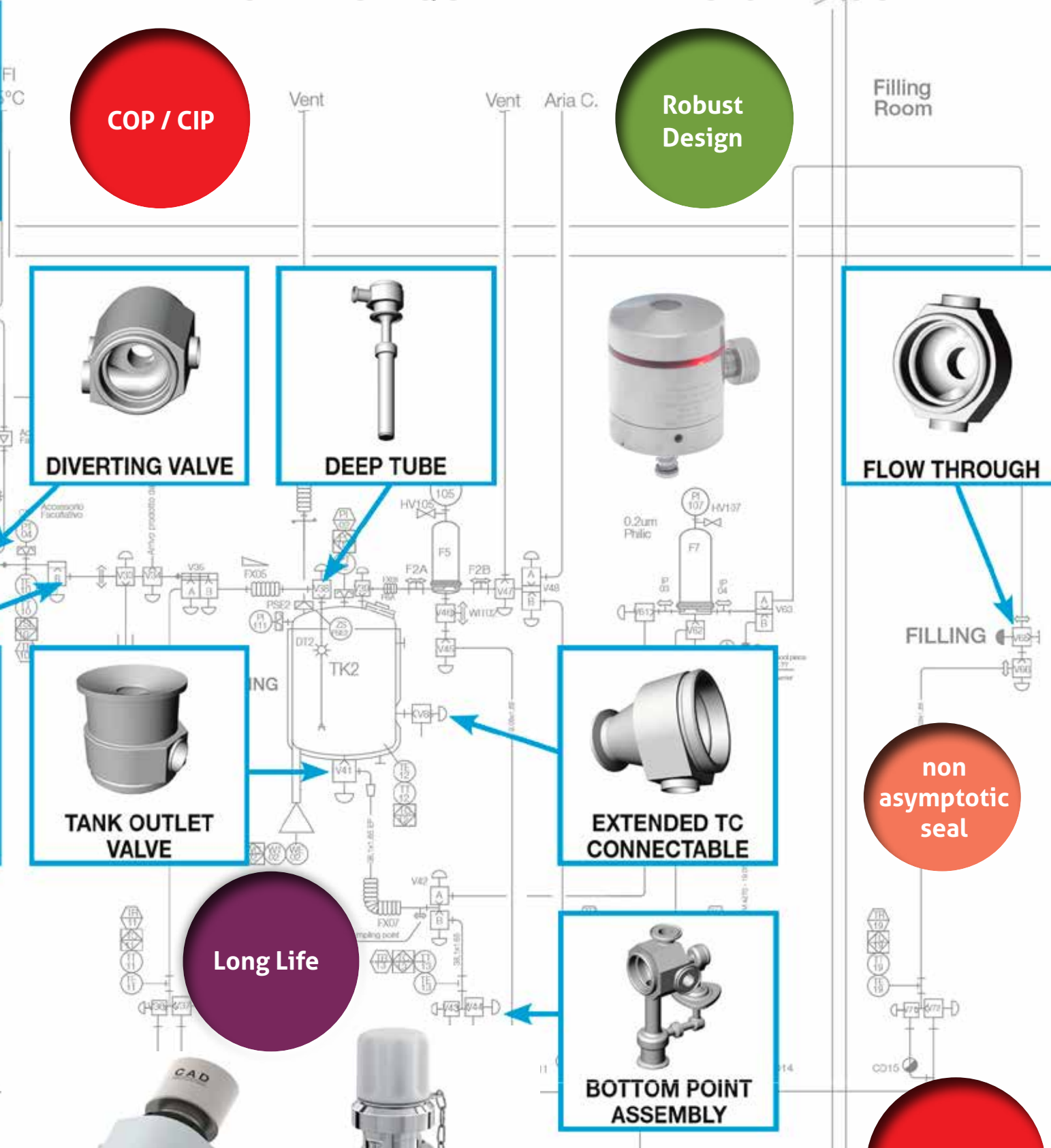
non asymptotic seal

Long Life



BOTTOM POINT ASSEMBLY

CIP / SIP



Pure-Gard & Opti-Gard sanitary rupture disks



Crevice and
Dimple Free

Tag
Free

Structural
Stabile

Reusable
Modular
Detection

Long



Innovation in sanitary pressure rupture disks for clean and aseptic design.

Protecting biopharma manufacturing, Elfab is leading provider of pressure management solutions.

Life

Wide Range to Suit Process Requirement

CIP / SIP

Robust Design

Aseptic Design



Combination of profession and quality Innovator of valves and pumps - Donjoy



Ball valve



Valve control unit



Positioner



Mixing proof valve



Cleaning technology



Filter



Diaphragm valve



Multiport diaphragm valve



Blender



Divert set valve



Butterfly valve



Angle seat valve



Man way



Safety valve



Centrifugal pump



Self-priming pump



Lobe pump



Aspetic sampling valve
Automatic regulating valve



Rebreather
Air release valve
Multi angle lighthouse
Mixing proof butterfly valve



Aspetic sampliAngle seat valve



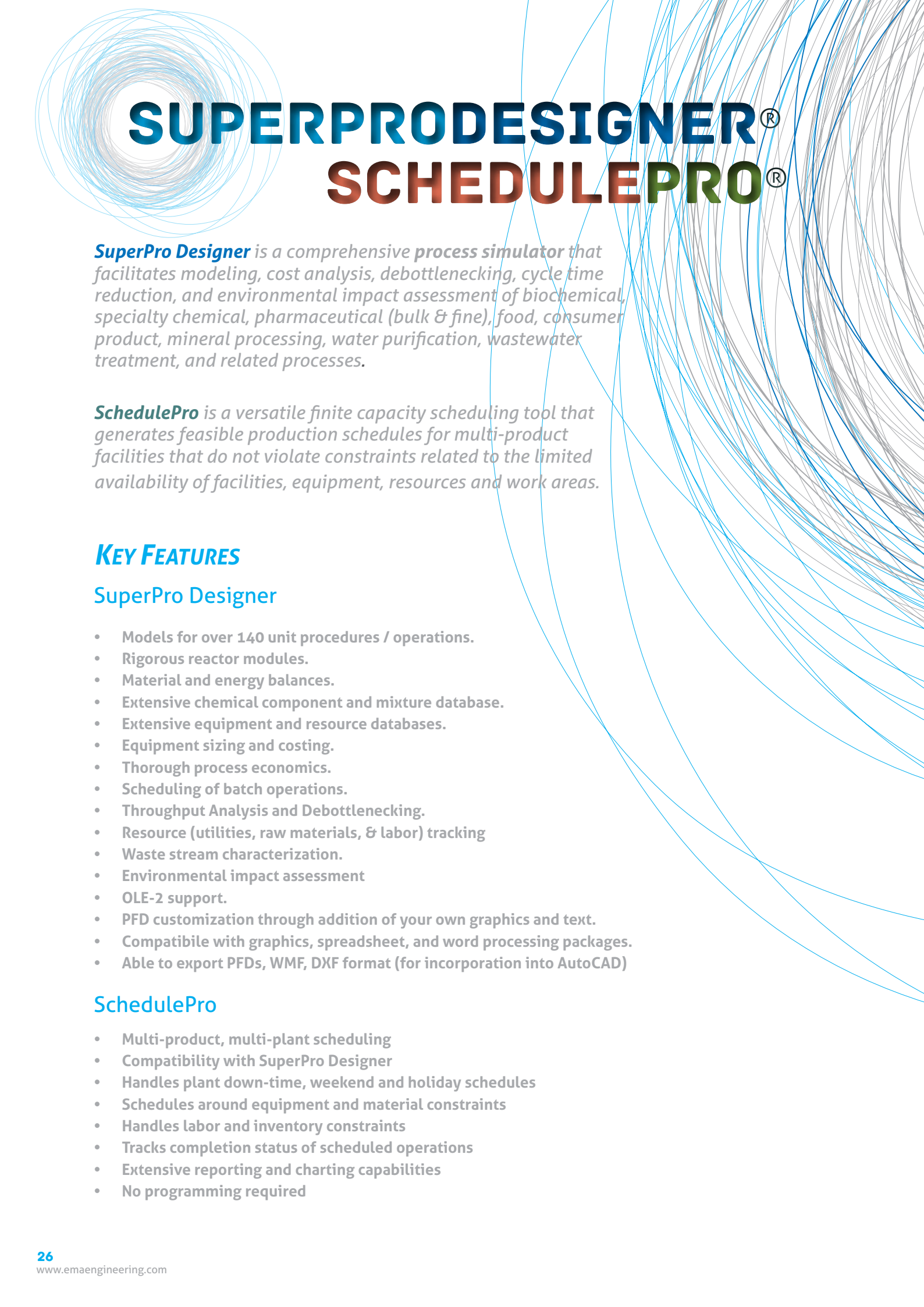
Air release valve
divert seat valve the second design



Sight glass light
Constant pressure valve



Globe valve
Mixing proof valve the second design
Positioner the second design
Valve control unit the second design



SUPERPRODESIGNER® SCHEDULEPRO®

SuperPro Designer is a comprehensive *process simulator* that facilitates modeling, cost analysis, debottlenecking, cycle time reduction, and environmental impact assessment of biochemical, specialty chemical, pharmaceutical (bulk & fine), food, consumer product, mineral processing, water purification, wastewater treatment, and related processes.

SchedulePro is a versatile finite capacity scheduling tool that generates feasible production schedules for multi-product facilities that do not violate constraints related to the limited availability of facilities, equipment, resources and work areas.

KEY FEATURES

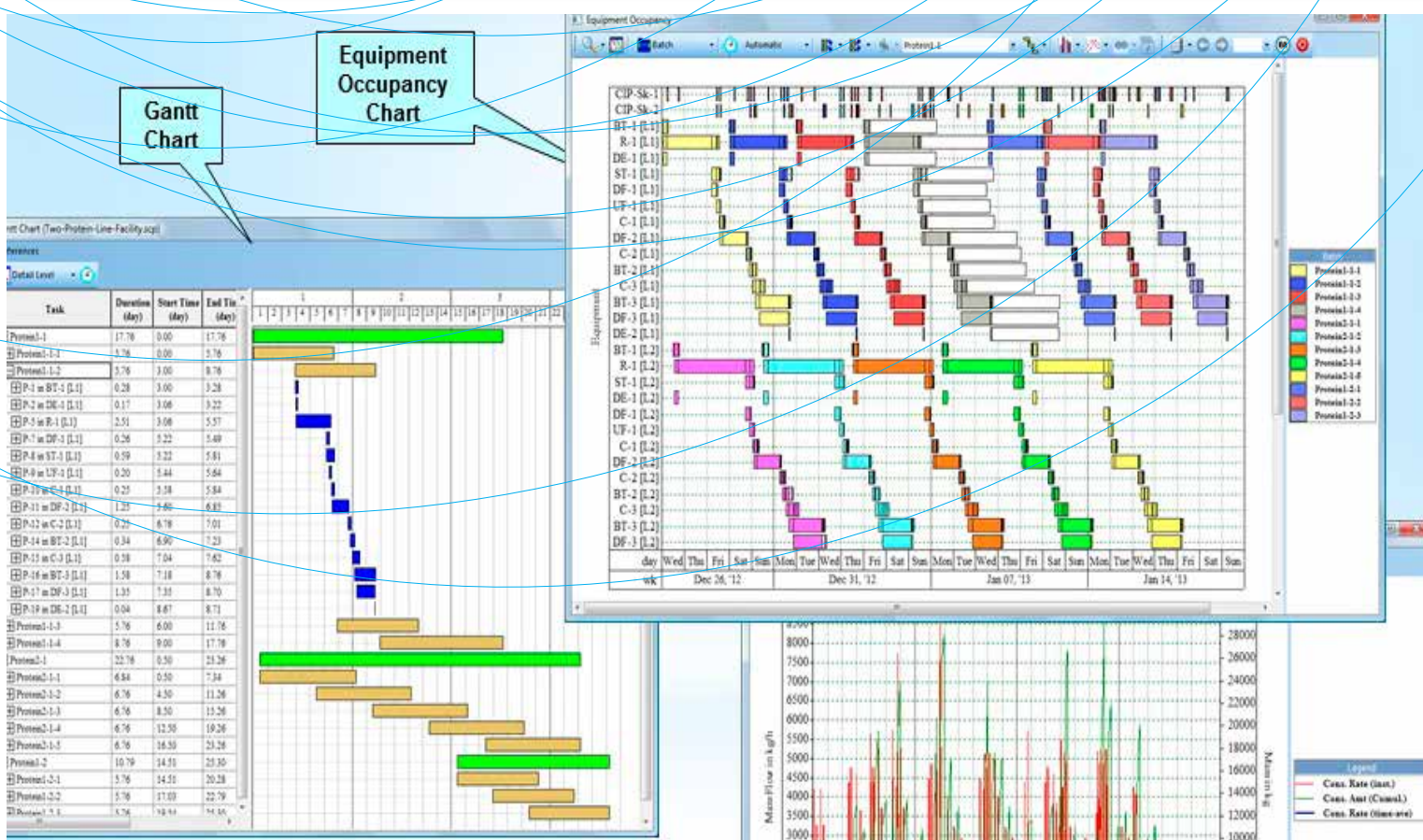
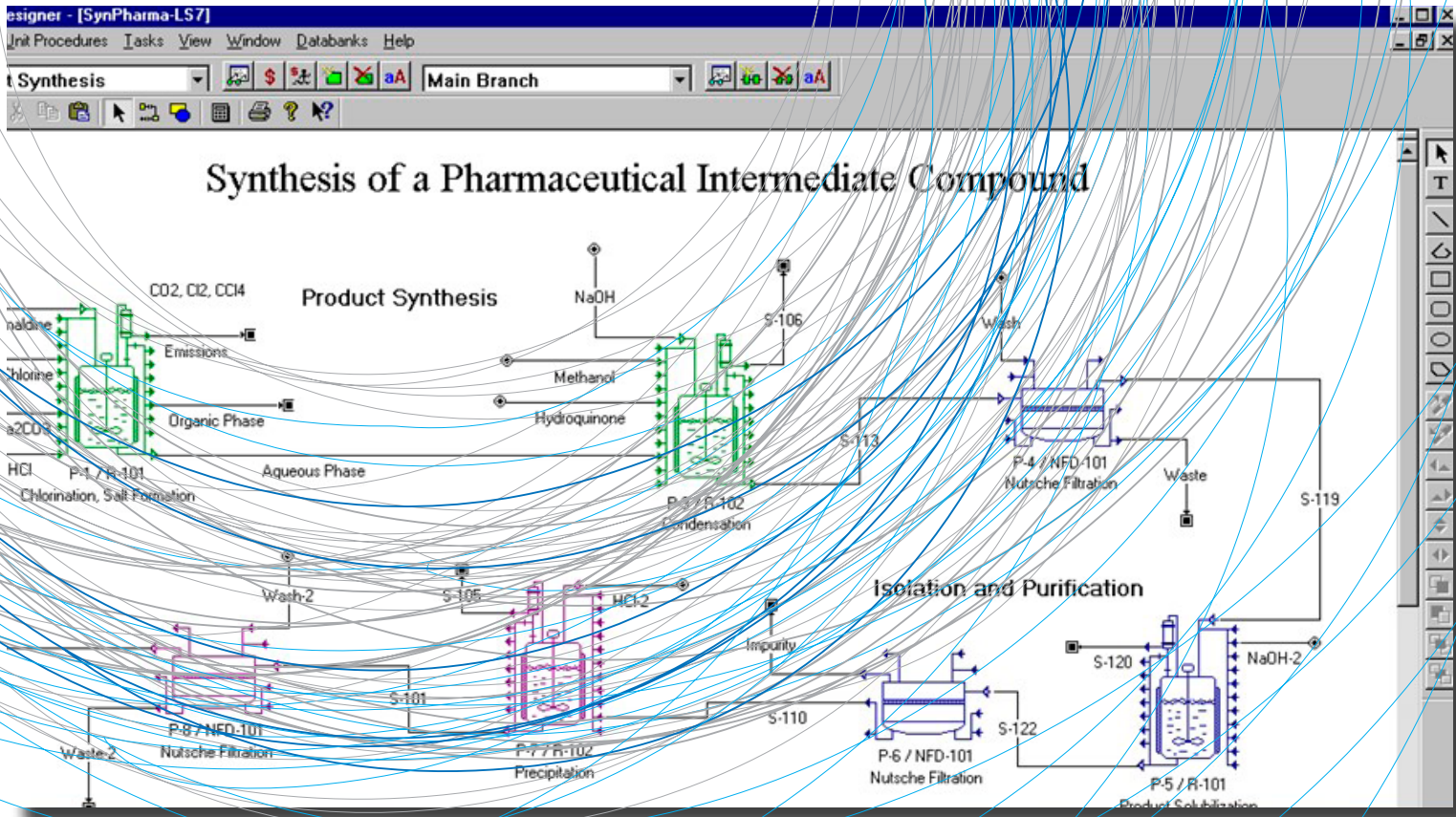
SuperPro Designer

- Models for over 140 unit procedures / operations.
- Rigorous reactor modules.
- Material and energy balances.
- Extensive chemical component and mixture database.
- Extensive equipment and resource databases.
- Equipment sizing and costing.
- Thorough process economics.
- Scheduling of batch operations.
- Throughput Analysis and Debottlenecking.
- Resource (utilities, raw materials, & labor) tracking
- Waste stream characterization.
- Environmental impact assessment
- OLE-2 support.
- PFD customization through addition of your own graphics and text.
- Compatible with graphics, spreadsheet, and word processing packages.
- Able to export PFDs, WMF, DXF format (for incorporation into AutoCAD)

SchedulePro

- Multi-product, multi-plant scheduling
- Compatibility with SuperPro Designer
- Handles plant down-time, weekend and holiday schedules
- Schedules around equipment and material constraints
- Handles labor and inventory constraints
- Tracks completion status of scheduled operations
- Extensive reporting and charting capabilities
- No programming required

Intelligen, Inc.

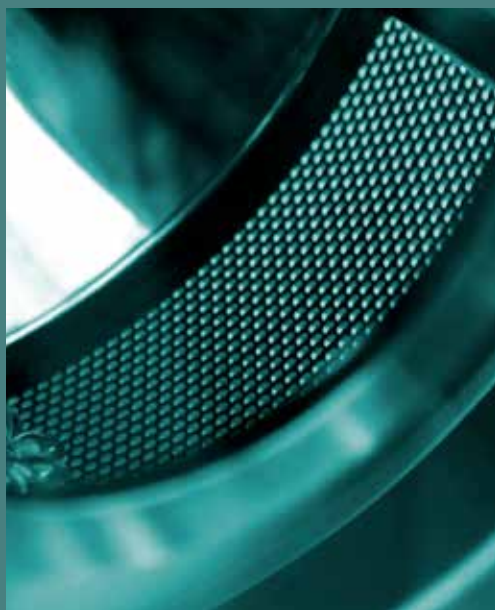




**ONE MAN'S
“MAGIC”**



**IS ANOTHER MAN'S
ENGINEERING**



EQUIPMENT DESIGN & MANUFACTURING

"Quality means doing it right when no one is looking."
- Henry Ford

Design and fabricate the needs

EMA Engineering design custom equipment that fits the needs, provides services whether it is done in the fabrication site or client's plant for piping and integration.

We have engineers, scientists and skilled workers with a quality management system, we design and manufacture excellent quality of equipment with all required documentation.

We compute the stress analysis for pressure vessels with ASME Sec. VIII Div.1 and use CAD Works Plant & PID, Autocad, Autodesk Inventor, Coade PV Elite, SolidWorks Premium EMA Engineering provides full compliance with 3A standards, cGMP, BPE standards that meets CFIA – FSAS/HACCP, FDA, USDA, S.F.S.A.P.S (France) and European Medicines Authority (EMA).

Typical modular equipment that EMA can design and fabricate:

Bioreactor & Fermentor Systems, CIP Systems, Media Preparation Systems, Purification & Filtration Systems, Chromatography Systems, Mixing, Batching & Blending Systems, vacuum drier, fluidized bed dryer, spray dryer, High Purity Water Pumping, Sanitary Double tube, Tube & Shell Heating exchangers, Clean Water Storage, PW system, WFI systems and distribution loop design and installation, Clean Steam Generators, Pasteurizing Systems, Continuous or Batch Bio-Waste Kill Systems....

Process Equipment

UF Systems

Filter Housing

Mobile Tanks

Skid base systems

PW System

Fermentation Systems

Process Piping

WFI System

Modular Approach

Chromatography Systems

Turnkey systems

Shipper Vessels

Custom Design



We specialize in design of custom or modular design and fabrication of process equipment for the biopharmaceutical, food, cosmetic and chemical industries. Cost effective solution, yet in excellent quality is our strategy.

VALIDATION

With our experienced professionals, we offer a broad portfolio of validation and compliance services. From small biotechnology start-ups to the largest multi-national corporations cGMP Validation, EMA Engineering will provide the same attention and management.

COMMISSIONING & QUALIFICATIONS

EMA Engineering provides commissioning and qualification for the successful delivery of small projects and also multi-disciplinary capital projects of large-scale manufacturing facilities.

We ensure cost effective equipment and process validations solutions that are in compliance with applicable regulations to minimize the risk.

At EMA Engineering, we will work with you to develop a customized Commissioning Plan that outlines the responsibilities of the design team, construction team, equipment suppliers, commissioning agent and owner during the commissioning process throughout the various phases of a project. The plan will also identify systems to be commissioned and the documentation processes to be used.



“

*Simplicity is the
ultimate
sophistication*

”

Leonardo da Vinci

BEST SOLUTIONS

COMPLIANCE

Our comprehensive approach to building commissioning ensures the facility owners move into fully functional buildings, and our detailed documentation meets the requirements.

We use the latest trend in C&Q field to assess your projects with cGMP applicability using GAMP and ISPE tools, apply the ICH Q8, Q9 and Q10 terminology to identify and measure the risks before offering your the ultimate C&Q solution.

EMA Engineering with alliance partner provides full service Validation and GMP Compliance consulting services for the pharmaceutical, biotech, medical device and medical diagnostic industries. cGMP specializes in the preparation and execution of validation and compliance documents for equipment, utilities, processes, laboratory instruments and computerized systems.

- Commissioning plan
- Commissioning protocols (FAT, SAT)
- Validation master plan (VMP)
- Standard operating procedures (SOP)
- Quality Manual
- Risk assessments
- Qualification protocol (DQ, IQ, OQ, PQ)
- Summary report and deviation report



We have the expertise and knowledge to design projects that comply with applicable regulatory bodies:

Bio pharmaceutical: Food and Drug Administration (FDA, United States), European Medicines Authority (EMA) and the Health Products and Food Branch (Canada).

Food & beverage processing: Canadian Food Inspection Agency (CFIA – FSAS/HACCP), United States Department of Agriculture (USDA)

**WE ARE FOR
YOU**

GET IN TOUCH

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twitter.com/emaengineering



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EMA ENGINEERING INC.

EMA Engineering brings value-added solutions to the complex engineering projects in the Pharmaceutical, Chemical and Renewable Energy Industry with an array of subjects such as Process Design Development, Troubleshooting, Value Engineering, Risk Management, Validations, Project Management...