



# Cloud Enabled Central Research Facility

*Siemens DCS COMOS Integrated Engineering*



**AARUPADAI VEEDU  
INSTITUTE OF TECHNOLOGY**  
(An Constituent College of Vinayaka Mission's Research Foundation)



**VINAYAKA MISSION'S  
RESEARCH FOUNDATION**  
(Deemed to be University under section 3 of the UGC Act 1956)



Accredited by NAAC



Approved by AICTE







**AARUPADAI VEEDU  
INSTITUTE OF TECHNOLOGY**  
(An Constituent College of Vinayaka Mission's Research Foundation)



**VINAYAKA MISSION'S  
RESEARCH FOUNDATION**  
(Deemed to be University under section 3 of the UGC Act 1956)

# **Cloud Enabled Central Research Facility**

**(Siemens DCS COMOS Integrated Engineering)**

DEPARTMENT OF EEE

AARUPADAI VEEDU INSTITUTE OF TECHNOLOGY  
VINAKAYA MISSION'S RESEARCH FOUNDATION  
PAIYANOOR – 603 104



Accredited by NAAC



Approved by AICTE

## **Cloud Enabled Central Research Facility (Siemens DCS COMOS Integrated Engineering)**

### **Vision**

To be recognized as an innovative and distinguished center and a provider of unique software solution for holistic plant management in the process industry and Process Automation with interdisciplinary education, nurturing research and development skills among students.

### **Mission**

1. To create, develop and foster capacity amongst students to become future development in industries and application that advances their ability to solve problems individually and in teams.
2. To create knowledge of fundamental principles and innovative technologies through learning, teaching and research in multi-disciplinary domains, focusing on project management, manufacturing, virtual commissioning, operator training in automation and mechatronics systems.
3. To facilitate academics - industry interaction.

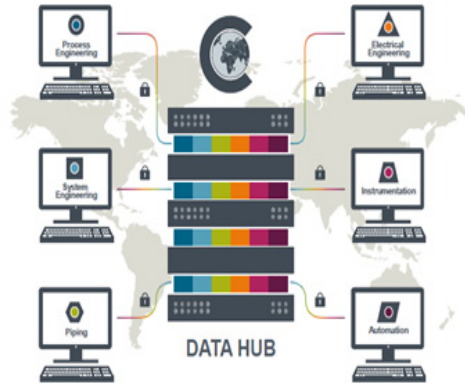
### **About the Central Research Facility**

The integrated COMOS software solution makes it possible to consolidate automation data from the control systems of different providers and make it available for re-engineering or for a new control system.

Global Collaboration in Engineering

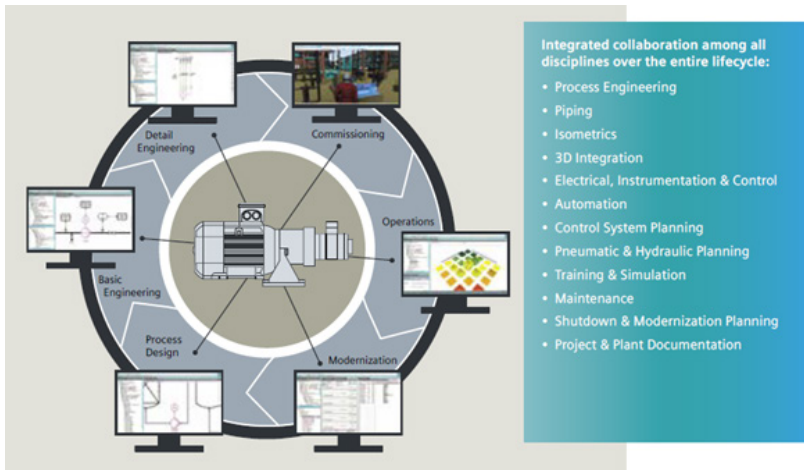
SIEMENS

COMOS completely integrates all disciplines into a globally consistent database



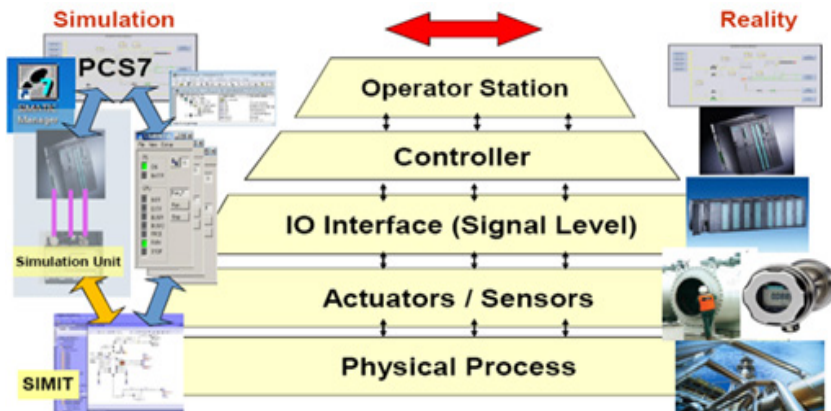
### About COMOS- Making data work

COMOS provides the process industry with a seamless flow of information based on a globally consistent database-delivering a common view of data across all disciplines and through all phases of the plant cycles.Plant Engineers and operators have access at all times to data that is always upto date in real time , independent of time zones. They cover all phases of the plant lifecycle from process design through basic and detail engineering to operation and modernization, and can be used either as comprehensive or stand-alone solutions.



## About DCS COMOS Integrated Engineering

The solution COMOS Automation supports electrical engineering for the plant through to full automation covering all processes relevant to electrical, instrumentation and control engineering by specialized solutions. Among other things, logical inter-object links and automated sequences are graphically mapped in diagrams and hydraulic as well as pneumatic workflow schemes are created on the basis of existing data. The integration of COMOS and the SIMATIC PCS 7 process control system makes it possible to combine data from concurrent work processes and operations. At the press of a button, the entire plant structure is generated from the control system engineering. Based on this data, virtual commissioning can also be performed through the seamless connection with SIMIT. Standard engineering over the entire lifecycle leads to closer cooperation between plant design and operation. This simplifies decision-making processes and minimizes costs for plant management.



### Facilities available at the center Hardware

1. Distributed Control System
2. Remote Labs (Process Control & Wireless Lab )
3. Distributed I/O
4. RFID System
5. SIMATIC RF 200 Reader
6. Profinet Interface Module
7. Industrial Wireless Communication

### Software

1. COMOS Plant Engineering Software
2. SIMATIC Pcs 7, Software Trainer Package V 8.2
3. SIMIT Simulation Framework

### Interdisciplinary Faculty Team

1. Mrs. L.Chitra     EEE
2. Mr. N.P.Gopinath   EEE
3. Mrs.B.Kalaiselvi     EEE
4. Mrs.Vijila   CSE
5. Mr. Saravanan    MECH
6. Mr. Karthikeyan   ECE

## MAJOR INVESTMENTS

S.NO	DESCRIPTION	TOTAL AMOUNT(Rs.)
1	COMOS SOFTWARE	625,000
2	DCS SIMULATION & ENGINEERING LAB	549,000
3	SIMATIC PCS 7,SOFTWARE TRAINER PACKAGE V 8.2	620,000
4	DISTRIBUTED CONTROL SYSTEM	478,000
5	DISTRIBUTED I/O	120,000
6	AUTOMATION WALL C TABLE	200,000
7	LCD PROJECTOR	90,000
8	REMOTE LABS (PROCESS CONTROL & WIRELESS LAB )	172,000
9	SCALANCE SWITCH X204	
10	DISTRIBUTED I/O	
11	PROFINET CABLE	
12	RFID SYSTEM	220,000
13	SIMATIC RF 200 READER	
14	PROFINET INTERFACE MODULE	
15	TRANSPONDER	
16	INDUSTRIAL WIRELESS COMMUNICATION	270,000
17	WIRELESS ACCESSPOINT PROFINET INTERFACE	
18	WIRELESS CLIENT PROFINET INTERFACE	
	<b>TOTAL</b>	33,44,000



## Proposed Activities

1. Design of low level and high level electrical and Instrumentation Layout
2. Design of Automation Systems
3. Plant Level simulation and Virtual Commissioning
4. Certification Training Programmes
5. Continuing Education Programme for Industry persons
6. Consultancy for Industrial Automation
7. Smart Campus Monitoring
8. Centralised facility for remote monitoring
9. Maintenance Management
10. Central Data Management



Pharmaceuticals

Power plants



### **Papers presented in International Conference**

1. Monitoring the Parameters Of Wind Mill Using SIMIT Software And Distributed Control System(DCS)
2. Design and monitoring the Automation of batch production in paint Industries
3. SCADA based automation system for process industries.
4. RFID based sensing technology and study of monitoring system for a conveyor belt system.
5. Designing the layout for Power distribution panel in MAFAARU airport , Maldives

### **Consultancy Works completed in tie up with**

1. Spark E&I Technologies
  - a. Sujatha Paint production Unit near Chennai
  - b. MAFAARU airport , Maldives

### **Students projects completed**

1. Design of windmill farm and monitoring the parameters using SIMIT software
2. Design of piping and instrumentation diagram of process industry
3. Design of SCADA system for monitoring the batch production of automation of paint industry.
4. Design of a Conveyor belt system
5. Design of piping and instrumentation diagram for power distribution panel in MAFAARU airport, Maldives.



**Aarupadai Veedu Institute of Technology,  
Vinayaka Mission's Research Foundation,**

(Deemed to be university under section 3 of the ugc act 1956)

Vinayaka Nagar, Old Mahabalipuram Road, Paiyanoor,  
Kancheepuram Dist, Chennai- 603 104, Tamil Nadu, India.

[www.avit.ac.in](http://www.avit.ac.in)