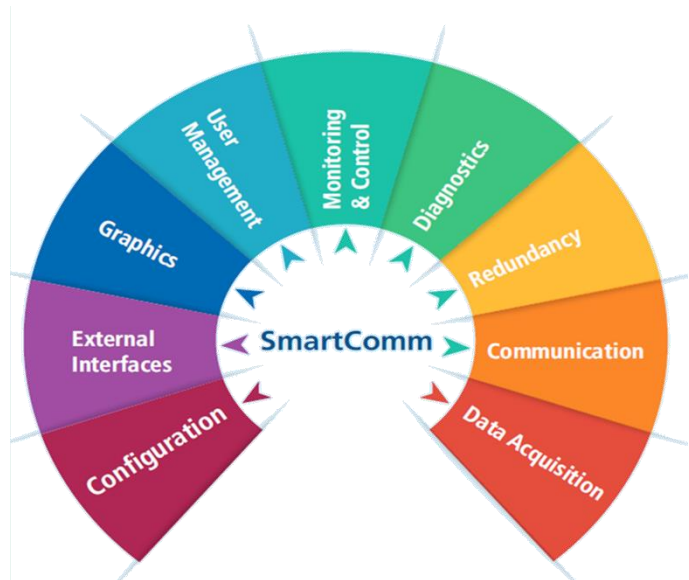
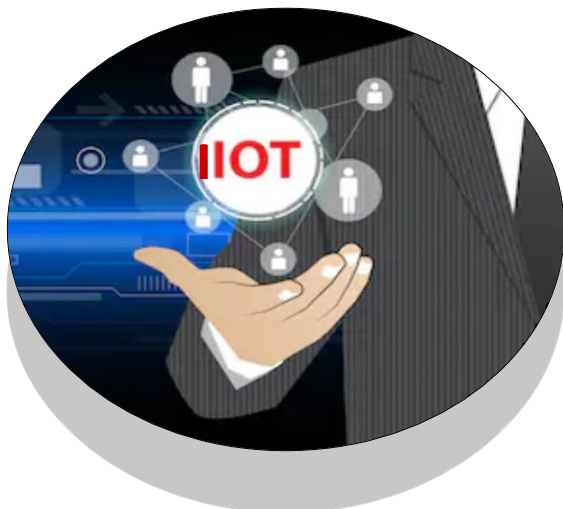




Industry 4.0 and Industrial Communication

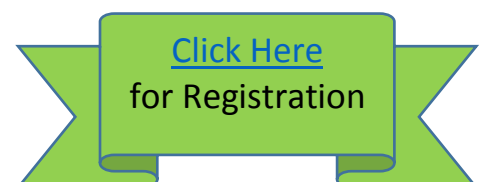
◆ An Industrial Revolution Focusing on Inter Connectivity, Automation, Machine Learning & Real Time Data

- ⇒ The Connected World - IoT, IIoT & Industry 4.0
- ⇒ Connected Smart IoT Devices & Industrial IoT applications
- ⇒ Data Platform & Data collection in industry
- ⇒ Role of Cloud Computing in Industry for data sending and receiving through cloud
- ⇒ Machine learning with Industrial data
- ⇒ Artificial Intelligence

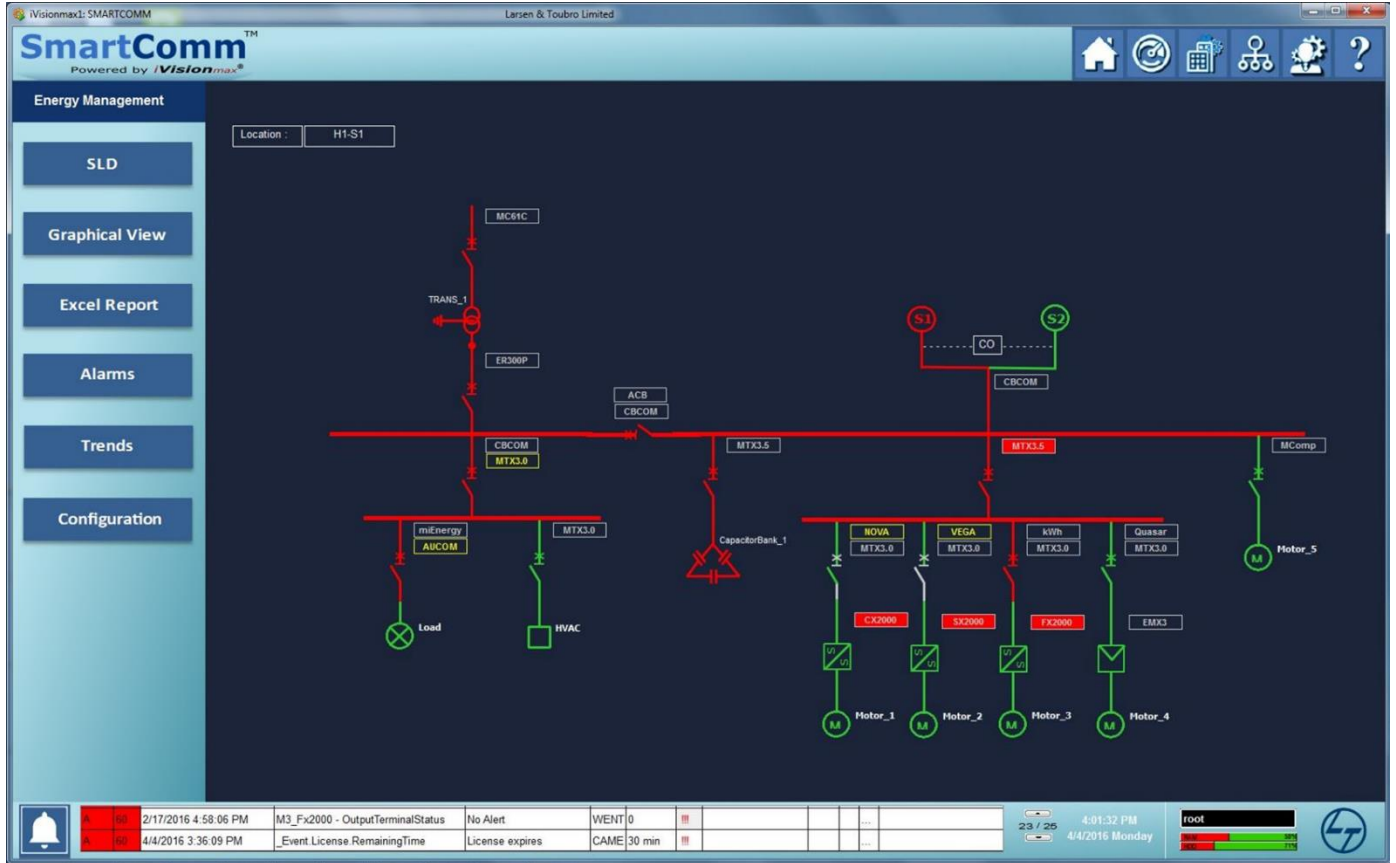


◆ Industrial Communication

- ⇒ Types of Standards of Industrial Communication
- ⇒ Integration of Smart Devices with Industrial communication
- ⇒ Energy Management System using Smart Meters & communication.
- ⇒ HMI Integration with Communicable devices.
- ⇒ PLC Programming Methodologies.
- ⇒ Logic Development & PLC Programming in Ladder Diagram.
- ⇒ Electrical SCADA - Live Demonstration of L&T Switchgear Factory



Electrical SCADA - Live Demonstration of L&T Switchgear Factory



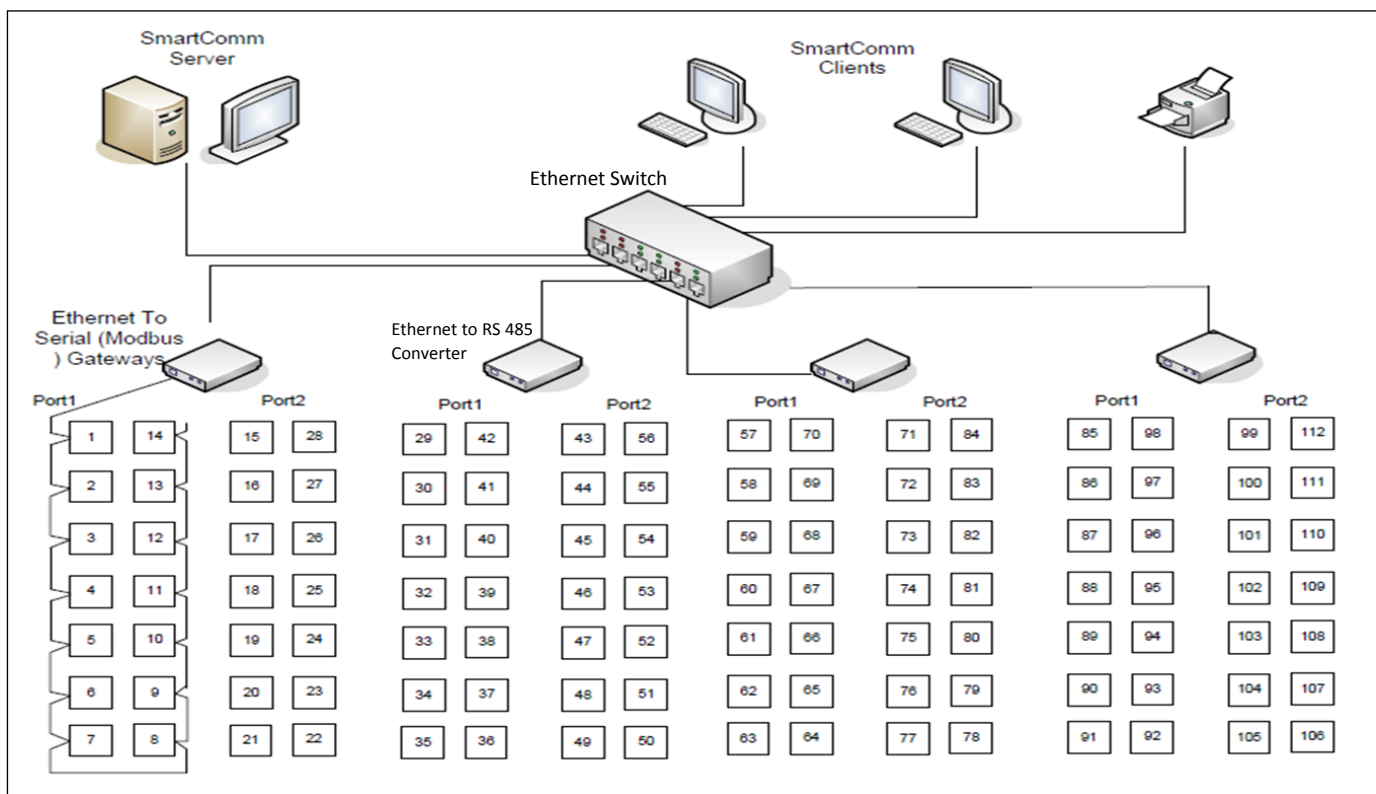
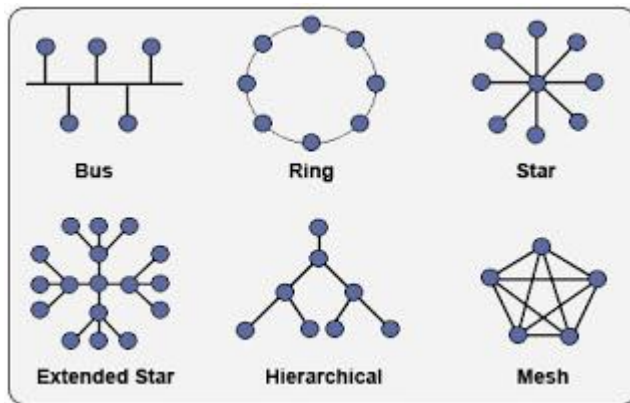
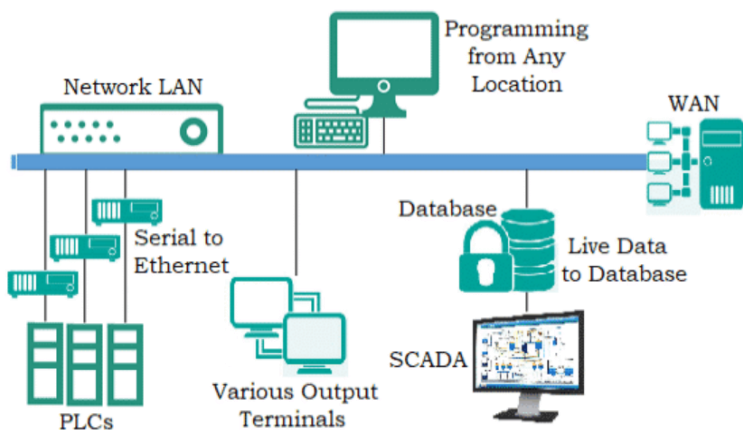
Energy Management Solution- Live Meters connected to EMS software

Energy Management Solutions

Key Features

- SmartComm Energy Management System software
- Meters with Class 1, Class 0.5, 0.5S, Class 0.2, 0.2S accuracy
- Meters with THD and individual harmonics up to 31st
- Direct access to Basic, Power and Energy parameters through front keys
- RS485 or Ethernet communication available
- Analog inputs and outputs, data logging options

Architecture & Topologies of Industrial Communication



Workshop - Industrial Communicable Devices



Day	Industry 4.0 & Industrial Communication Program Contents	
Day 1	Welcome & Introduction	
	<i>Theory</i>	<i>Practical</i>
	<ul style="list-style-type: none"> • The Connected World - IoT, IIoT & Industry 4.0 • Connected Smart IoT Devices & Industrial IoT applications • Data Platform & Data collection in industry • Role of Cloud Computing in Industry for data sending and receiving through cloud • Machine learning with Industrial data 	
	<ul style="list-style-type: none"> • Introduction and Types of Industrial Communication • Basics of Serial Communication • Standards of communication - Wired RS232, RS485, Ethernet. • Understanding Hardware Requirement for Industrial communication • Networking Topologies 	<ul style="list-style-type: none"> • Testing & Debugging of communication devices & Hardware • Communication with Air Circuit Breaker for On/Off Indication, Breaker Control, Parameter Metering & Protection setting. • MCCB release communication for On/Off Indication, Breaker Control, Parameter Metering and Protection setting.
Day 2	<i>Theory</i>	<i>Practical</i>
	<ul style="list-style-type: none"> • Wireless Communication & FO Communication • HMI Integration with Communicable devices like Meters, Breakers, Relays etc. for Local control. 	<ul style="list-style-type: none"> • Communication with Multifunction Meter for Data logging in Energy Management Software for better utilisation & Conservation of Energy. • Communication with Variable Frequency Drives, Motor Protection Relays • Controlling and setting of parameter with software. • Interfacing of Meter with EMS Software • Demonstration –Energy Management Solution and Electrical SCADA of L&T Switchgear Factory
Day 3	<i>Theory</i>	<i>Practical</i>
	<ul style="list-style-type: none"> • Concept of Automation & Process Control • Automation System Architecture • PLC Hardware Details • Selection of PLC Hardware • PLC Programme Methodologies 	<ul style="list-style-type: none"> • PLC Programming in Ladder Diagram • Advanced Instruction in PLC Programming • Development of Logics • Demonstration of PLC Programming Exercise • PLC integration with HMI
	Open Q & A and Post Quiz	
	Feedback & closing	



SWITCHGEAR TRAINING CENTRE

TRAINING COURSE REGISTRATION DETAILS


To confirm your booking:

1. Register yourself online through online form: <https://forms.gle/yf1cpDKoT5RNP4ZY7>
2. Fees should be paid in advance by way of Demand Draft drawn in favour of 'LARSEN AND TOUBRO LIMITED', payable at Vadodara.
3. Alternatively fees can be paid in advance by way of NEFT / RTGS to our bank a/c below:

Beneficiary Account Name	: Larsen and Toubro Limited
Bank Name	: State Bank of India
Branch	: IIT Powai, Mumbai – 400076
IFSC code	: SBIN0001109
Current Account No	: 10725730100
PAN No.	: AAACL0140P
GST No.	: 24AAACL0140P6ZK
4. Registration will be confirmed only after receipt of the course fees.

Important Notes:

- a) For Practical Sessions on Industrial Communication, convertors (USB -- RS485, RS485 -- Ethernet), Communication wires, and tools/tackles etc. will be provided by L&T STC.
- b) However, it is recommended that students carry Laptop to have Hands-on Individually.
- c) In case of Non-Availability of Laptop, they will have to perform hands-on in a group on Training Centre's Laptops
- d) Participants will receive written confirmation of their registration, after which they should plan their journey to the Training Centre.
- e) All programmes are conducted on a 'best effort' basis.
- f) Participants are expected to make their own arrangements for lodging and boarding.

Timings	8.45 AM - Reporting Time, 9.30 AM to 5.00 PM - Training 8.45 AM to 9.15 AM – Breakfast, 1.30 PM to 2.15 PM - Lunch
Batch Size	20 students
Eligibility	<ul style="list-style-type: none"> – Degree Engg. Students of Pre-final/Final year (Streams: Electrical, Mechatronics & Electronics & communication) – Diploma Engg. Students of Final Year (Stream: Electrical, Mechatronics & Electronics & Communication). – Interested Candidates perusing M. Tech & Ph. D can also register their nominations. – Students who already attended SP3/SP5 Program at our L&T STC can also avail this program.
Total Fees	• INR 3,600/- + 18% GST = INR 4,248/-
Inclusions	<ul style="list-style-type: none"> – Training Certificate with Group Photo to each participating Student – Souvenir to each Student – Refreshments i.e. Tea, Breakfast & Lunch during program Days – Training Handouts, Pen, Pad etc.
Address	<p>Larsen & Toubro Ltd Switchgear Training Centre E&A, VSW, Ankhol Plant, B/h Knowledge City, NH-8, B/w Ajwa Chokdi & Waghodia Chokdi, Vadodara-390019, Gujarat, India. +91 265 614 7808 STC-Vadodara@Lntebg.com</p> 

Contact Details:

Mr. Divyeshkumar Dhokiya
Land Line: - +91 265 614 7813
Mobile No: 96547 79818
Email ID: DIVYESH.DHOKIYA@LNTEBG.COM

Mr. Divyesh Vaghasiya
Land Line: - +91 265 614 7805
Mobile No: 90440 66888
Email ID: DIVYESHB.VAGHASIYA@LNTEBG.COM

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