for a greener tomorrow

MITSUBISHI ELECTRIC
Changes for the Better

THEME AND RULE BOOK

5th Mitsubishi Electric Cup

Collaborate. Innovate. Excel.

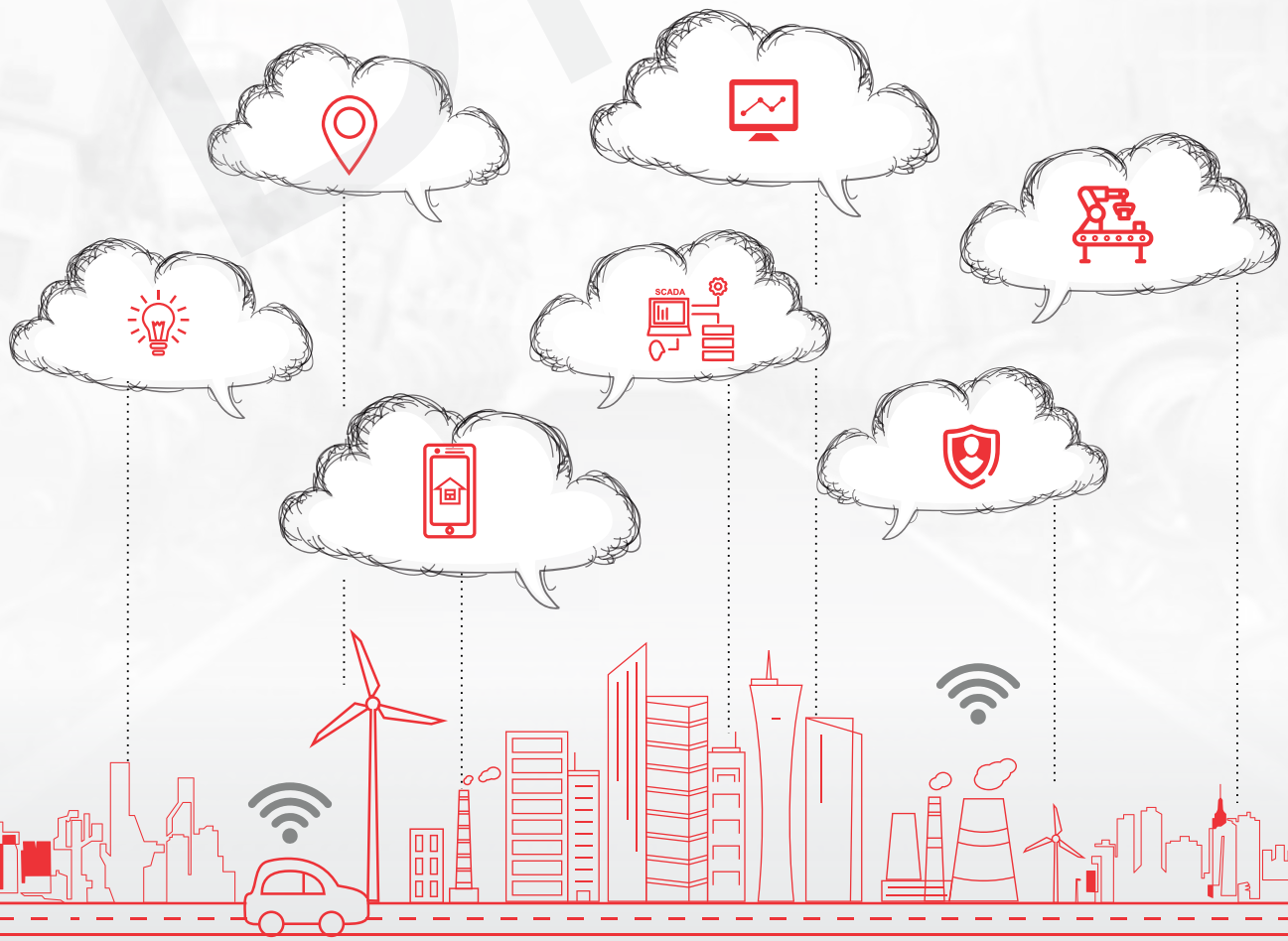
In Association with

B.M.S. COLLEGE OF ENGINEERING
Estd:1946
BANGALORE - 560 019

THEME 2020

VISUALIZING IoT SOLUTIONS FOR SMART AUTOMATION

14th - 15th February 2020



INTRODUCTION

Today, strengthening the cultivation on students' innovative consciousness, cooperative spirit and engineering practice abilities is a vital reform of higher education. Competitions play a positive role in further developing higher education reform, consolidating basic knowledge education, cultivating comprehensive abilities, integrating theories and practices, etc. for University students through promoting extracurricular scientific and technical activities. Consequently, Mitsubishi Electric India has introduced a science and technological competition, "Mitsubishi Electric Cup", the National level automation competition for engineering students (including undergraduates and postgraduates) on a yearly basis, offering opportunities to showcase their talents in the domain of factory automation. The competition includes innovative ideas, design and application in the field of factory automation which will be held every year.

Mitsubishi Electric has grown to become one of the most respected organisations of the world, with a promise to provide a better life for the future generations. Its vision is to shape the future through technology that ensures a brighter, better and greener tomorrow.

In India, Mitsubishi Electric's operations were flagged-off in the mid-1950s. Since then, we have grown to become one of the most highly-valued organisations in this country. With the passage of time, we have moulded ourselves into the Indian flavour and developed a wide range of innovative and high-quality products for the Indian market. This includes industrial automation machinery, automotive equipment, air conditioners, visual information systems, photovoltaic (solar) solutions, transportation systems and many more.

Mitsubishi Electric propagates a responsible attitude towards the environment. Our futuristic vision guides us to create products which are super energy efficient and help to create a sustainable future.

For more than 75 years, manufacturers from all over the world have relied on Mitsubishi Electric for advanced automation equipment. Mitsubishi Electric helps in bringing higher productivity and quality to the factory floor. Today, our automation products are widely used in all walks of life, such as PLC, inverters, servos, CNC, low-voltage electric appliances, industrial robots and other products widely used and performed well on every corner of Indian industry and have greatly contributed to India's economic development. Up to now, Mitsubishi Electric India, through CSR activity, has collaborated with various institutes by contributing world class FA training equipment, training to faculty and students, Edumeet, seminar and workshop.

MISSION

Constantly developing information/artificial intelligence technology has provided traditional manufacturing industry transformation with powerful force for change and technical guarantee. The researches on intelligent manufacturing aim to establish a highly flexible, personalized, and digitalized production mode for products and services; while on the other hand, with the approaching of energy crisis and aggravation of environmental pollution, an energy conservation, emission reduction and environmental protection based green factory has become people's common pursuit. Intelligent future green factory will address the above two issues. Mitsubishi Electric serves the continuous improvement and transformation of Indian industries to benefit from its rich technology and products. Therefore, the Competition Organization Committee hopes students can realize intelligent manufacturing and energy saving management system under the guidance of teachers through innovation and by taking use of Mitsubishi Electric's technology platform.

In the Competition, students are required to integrate Mitsubishi Electric's factory automation products (including PLC, servo, inverter and human-machine interface, processing machine, etc.), built up and achieve an analogous system of intelligent manufacturing and energy saving management application, based on e&eco-f@ctory concept and taking e-f@ctory system as the trunk.

The Competition aims to improve college students' engineering application capability, arouse their interests in learning technology, build up innovation capacity and cooperation spirit, as well as improve their self-management, ability to work and communication skills. It is also intended to embody the "learning for practice" ideology, review students' actual manufacturing and commissioning abilities, meanwhile enhance exchange and cooperation between university and enterprise.

THEME

The Competition primarily embodies three parts, that is, 'System Design and Presentation', 'Basic Knowledge' and "Good Behaviour". "System Design and Presentation' requires participating teams to focus on the theme of 'Visualizing IoT Solutions For Smart Automation', independently design and produce a complete set of devices / models by using Mitsubishi Electric factory automation products, the control system shall be built up based on e&eco-F@ctory concepts.

As per the theme 'Visualizing IoT Solutions For Smart Automation', it is expected to include IoT, interfacing through web based solutions, connectivity with upper layer of Manufacturing Execution Systems (MES). For example, if machine/model can be operated through mobile phone / or apps running on mobile, indication of overall operational data on Mobile, etc.

e-F@ctory promises enhanced productivity. It makes full use of leading control technologies and network technologies to 'visualise' production information, including quantitative and qualitative production data and equipment information, and links production equipment to higher manufacturing execution systems to allow production information to be incorporated into production plans be utilised to ensure quality traceability.

eco-F@ctory allows 'visible management' of power usage through the introduction of measuring equipment and technologies that support energy conservation efforts by meticulously measuring power usage. It also promotes the effective installation of inverters and other energy saving devices to not only eliminate wastefulness and surges in energy consumption but to reduce overall power usage.

To summarize, e&eco-F@ctory based solutions provide a means to 'Measure, Visualise, Reduce and Manage' Energy Usage in the Manufacturing Industry.

Participant can develop enhanced versions of manufacturing processes like packaging, conveying, image processing, bottle filling process, mixing and separating different components, advanced Process control in manufacturing, model for smart building / smart city, efficient storage system, printing, innovative equipment for social cause, and many more. These are few examples, but participants are encouraged to use their imagination & creativity to develop their model. They are motivated to design an Electro-Mechanical Model Displaying the working of a specific process/part of process with improvement in the conventional systems.

Participants shall bring their own Prototype Machine/Model controlled by Mitsubishi Electric FA Components, together with necessary tools, insulation shoes and computers for debugging. During the competition, participating teams shall demonstrate self-produced system, and provide presentation and defence for the system design and innovations.

Basic set of Mitsubishi Electric FA components (comprising of PLC, HMI and VFD or Servo Drive – Servo Motor, MCBs set) will be given on returnable basis to the participating institute. All other electro-pneumatic, mechanical, sensor or any other accessory will be in participants/institute's scope. If any team needs additional Mitsubishi Electric hardware, then institute needs to purchase from authorized Channel partners of MEI or arrange by their own.

For additional FA components, only Mitsubishi Electric Make FA components are allowed to use. Contact your technical mentors for further details.

A. Basic Knowledge Test

The Basic Knowledge test is a closed-book exam with a limited time (30 mins). Each team shall independently complete the test with group discussion for consensus answers; the test includes choice and true or false questions. The Basic Knowledge test involves questions on PLC, Inverters, HMI, Servos and FA network, aiming to examine students' understanding of Mitsubishi Electric products and technologies. The participating teams should learn related knowledge of above mentioned five aspects in advance.

Participants can also refer the Mitsubishi Electric Automation e-learning website:(http://www.mitsubishielectric.com/fa/assist/e-learning/index.html).

B. System Design and Demonstration Skill

The System shall be based on Mitsubishi Electric automation products (including low-voltage apparatus) and the major theme is the application of automation system (e&eco-F@ctory). Self-chosen design / production Idea shall focus on the theme of this competition, that is, 'Visualizing IoT Solutions For Smart Automation'. Shortlisted Teams shall prepare a working model of the proposed idea along with the necessary documents under the guidance of faculty adviser to be demonstrated at the competition venue. All the selected teams are required to design their models in an independent and innovative manner.

During the final competition, the selected teams will be judged on the following points:

1. Design of the Model		
2. Innovation in Idea	:	Originality of concept & Socio-Commercial Viability
3. System Optimisation	:	Integration of Electromechanical hardware as per Industry standards and Optimised use of FA Hardware & Components
4. General Safety	:	Safety Measures implemented in the model
5. System Efficiency	:	Operational Accuracy and Efficiency with optimised usage of resources
6. Demonstration of Model	:	Working of Model & Overall System arrangement
7. Overall Presentation	:	Effectiveness in explanation of proposed concept/idea, Presentation skills and defence of the concept

C. Good Behaviour

Participating teams must comply with the discipline and arrangements of the Organizing Committee, the words and deeds should be friendly in a civilized manner.

COORDINATING PARTNER

The 5th edition of Mitsubishi Electric Cup is organised in association with B. M. S. College of Engineering (B.M.S.C.E.), Bengaluru, Karnataka. The Institution is the first private engineering college in the country established in the year 1946. B.M.S.C.E. owes its existence to the vision of its beloved founders, Late Sri. B. M. Sreenivasaiah and his illustrious son Late Sri. B. S. Narayan. Today, the college offers 13 Undergraduate & 16 Postgraduate courses both in conventional and emerging areas. 15 of its Departments are recognized as Research Centres offering PhD/M.Sc (Engineering by Research) degrees in Science, Engineering, Architecture and Management. The College has been effectively practicing outcome based education.

B.M.S.C.E. is accredited with the highest Grade of A++ by NAAC (2019-2024) with a CGPA of 3.83 on a scale of 4 and the programs are accredited by National Board of Accreditation (NBA) in Tier I format under Washington Accord. The college is ranked 69th among top engineering colleges in the country by National Institutional Ranking Framework (NIRF-2019) and is ranked consistently among the top engineering colleges in the country by various agencies.

ORGANIZING COMMITTIEE

PATRONS

Mr. Katsunori Ushiku
Managing Director,
Mitsubishi Electric India Private Limited

Dr. B. S. Ragini Narayan
Donor Trustee and Chairperson,
B.M.S. Education Trust

Dr. P. Dayananda Pai
Trustee, B.M.S. Education Trust & Chairman,
B. M. S. College of Engineering, Bengaluru.

ADVISORY COMMITTEE

Mr. Rajeev Sharma
Head, Corporate Services & Strategic Planning,
Mitsubishi Electric India Private Limited

Mr. Vikram Mattoo
General Manager,
Mitsubishi Electric India Private Limited

Mr. Rameshchandra Bhorania
Asst. General Manager,
Mitsubishi Electric India Private Limited

Mr. Hemant Thakur
Asst. General Manager,
Mitsubishi Electric India Private Limited

Dr. Jayesh Barve
President, International Society of Automation
Bengaluru Section

Dr. Sunil Shah
Senior Member, International Society of Automation
Bengaluru Section

Dr. Anita Khosla
Head, EEE,FET, Manav Rachna International
Institute of Research & Studies, Faridabad

Dr. Samita Maitra
Dean-Academics,
B.M.S. College of Engineering, Bengaluru

Dr. H. S. Guruprasad
Dean-Student Affairs,
B.M.S. College of Engineering, Bengaluru

Dr. L. Ravi Kumar
ICR&D, B.M.S. College of Engineering, Bengaluru

MEDIA CO-ORDINATORS

Mr. Abhi Shekhar
Corporate Marketing Communications,
Mitsubishi Electric India Private Limited

Mr. Abhijeet Kokane
FAID, Marketing Communications,
Mitsubishi Electric India Private Limited

Prof. S. Kumuda
Asst. Prof., E&I Engg.,
BMS College of Engineering, Bengaluru

GENERAL CHAIRS

Mr. Hisahiro Nishimoto
Director, FAID
Mitsubishi Electric India Private Limited

Dr. Ravishankar B. V.
Principal
B.M.S. College of Engineering, Bengaluru

Dr. Ravishankar Deekshit
Vice-Principal
B.M.S. College of Engineering, Bengaluru

PROGRAMME CHAIRS

Mr. Manoj Gupta
Sr. Manager
FAC, Mitsubishi Electric India Private Limited

Dr. Veena N. Hegde
HOD- E&I Engg.,
B.M.S. College of Engineering, Bengaluru

EXECUTIVE COMMITTEE

Dr. Santosh R. Desai
Asst. Prof., E&I Engg.,
B.M.S. College of Engineering, Bengaluru
(Convenor)

Mr. Devendra Singh
Mitsubishi Electric India Private Limited

Mr. Jasveer Singh
Mitsubishi Electric India Private Limited

Mr. Shrikant Takale
Mitsubishi Electric India Private Limited

Mr. Kishor Shinde
Mitsubishi Electric India Private Limited

Mr. Gururanjan Kedlaya
Mitsubishi Electric India Private Limited

Dr. K. Narasimha Rao
B.M.S. College of Engineering, Bengaluru

Dr. Mamatha M. N.
B.M.S. College of Engineering, Bengaluru

Prof. Preethi K. Mane
B.M.S. College of Engineering, Bengaluru

Dr. C. Lakshminarayana
B.M.S. College of Engineering, Bengaluru

Dr. Rajeshwari Hegde
B.M.S. College of Engineering, Bengaluru

Dr. Pratima Bhat K.
B.M.S. College of Engineering, Bengaluru

Dr. K. R. Sudhindra
B.M.S. College of Engineering, Bengaluru

TEAM FORMATION

Participating Institutes can decide the team from various streams of UG & PG like Electronics, Electronics & Telecommunications, Instrumentation, Mechanical, Electrical, Mechatronics, Computers/IT, etc. with below criteria:

Maximum No. of members: Four Students (UG + PG)

Maximum No. of PG students per team: 1 No.

Faculty Adviser: 1 No.

Role of Faculty Adviser: He/she will be advising the team for selection of model, objective of model etc. and will act as a general guide throughout the competition. He/she will not be involved directly for any programming, hardware wiring and fabrication or similar task since these are supposed to be done by the students.

COMPETITION PROCEDURE

1. Team Registration and Proposal Submission – 1st Sep'19
   a. All the participating teams need to register online on the website https://www.mitsubishielectric.in/fa/mecup/. All the documents mentioned on the website need to be submitted compulsorily with the specified format. Without those documents, registration would be considered incomplete. Registration will be closed after 1st Sep'19.
   b. The following documents shall be submitted with specified format (refer website for document format):
      i. Project Abstract and Design. Proposal shall be of about 2000 words in PDF format. Teams can even use diagrams and mechanical drawings for explaining their proposal. Extra Pages may be added for Drawings and sketches (1 MB Max)
      ii. Bill of material with approximate budget in PDF Format (1 MB Max)
      iii. Presentation of Proposal in PDF format (6 MB Max)
      iv. Declaration document as mentioned in the template in PDF Format (1 MB Max)
2. Review of the Submitted Proposal by the selection team – 1st Sep'19 – 15th Sep'19.
3. 35 shortlisted Teams will be notified through mail regarding their selection on 15th Sep'19. List of short listed teams can be checked on our website also. (https://www.mitsubishielectric.in/fa/mecup/)
4. Dispatch of FA components to the institute of selected teams by last week of Sep'19.
5. Mitsubishi Electric India will take care of all expenses to send material to the selected teams.
6. Preparation of Model (Oct'19 to Feb'20): Selected Teams will start preparation of the models based upon their proposal. The teams will be able to approach MEI FA centre for any technical assistance or training on FA products. The training/technical assistance on FA product will be provided to the selected teams on free of cost basis. The Schedule of training will be as per the convenience of concerned FA centre. The FA Centre details are provided in the contact page on the website.
7. Submission of Intermediate Progress Report (on or before 15th Dec'19): The Selected Teams will have to submit an intermediate report including pictures of the actual model in PDF format in not more than 5 pages (A4 Size). They will also require to submit a video clip of minimum 30 sec. and maximum 60 sec. (max. 20 MB in avi/wmv format only) displaying the actual model.
8. Submission of Intermediate report shall be done through online process. Special Unique code and pass key will be given to each team to submit Intermediate report.

9. Submission of Final Video (on or before 5th Feb'20): The teams need to submit the video of working model (with max. size of 20 MB in avi/wmv/mp4 format only). Teams should ensure that the quality of video is good enough for evaluation of the model.
10. Final Competition (14th – 15th Feb, 2020):
    a. Teams can carry or send their model to the venue. They can send the Model on or before 13th Feb'20.
    b. Upon arrival, the teams will have to register their participation.
    c. The teams will get access to venue from 9 am (Full duration of access venue should be mention), 13th Feb'20 for installation and trials.
    d. Orientation program and Basic Knowledge Test on 13th Feb'20 from 02:00 pm – 04:00 pm.
    e. Exhibition of Model on 14th – 15th Feb'20 from 10 am onwards.
    f. Evaluation by the judges on both days 14th – 15th Feb'20.
    g. Prize Distribution Ceremony on 15th Feb'20, 03:00 pm onwards.

The detailed Agenda for the Competition will be shared on 13th Feb'20 with participants.

SCHEDULE

10th Jul'19	Announcement of Competition
1st Sep'19	Registration, Declaration and Submission of Proposal (Online registration)
15th Sep'19	Announcement of Selected Teams – Top 35 teams
30th Sep'19	Dispatch of Mitsubishi Electric FA hardware set to selected team
Oct'19 to Feb'20	Each team will prepare model by process of fabrication, wiring, programming, commissioning, testing, etc. Technical Training, Webinar, Assistance for each selected team will be arranged by FA centres located at various locations.
15th Dec'19	Intermediate Report Submission – Online Submission through portal
14th – 15th Feb'20	Final Competition @ B.M.S. College of Engineering, Bangaluru Karnataka, India

PROPOSAL SELECTION PROCUDERE

The Following selection procedure will be implemented for selecting top 35 teams from the received proposals:

1. Proposal and Design (20 marks)
   - Innovation Quotient (10 marks) – Will be measured based on the Innovativeness of the proposal with highlighting how the proposed solution addresses the theme - 'Visualizing IoT Solutions For Smart Automation'
   - Technical Complexity (10 marks) – complexity of the process being addressed in the proposal.
2. Quality of work (20 marks)
   - A well-documented proposal with detailed description of process being addressed, the criticalness of the process and proposed solution.
   - Feasibility of proposal realizable within the Competition duration and commercial viability.
3. e&eco-F@ctory Concept (10 marks)
   - The proposals addressing the concept of e&eco-F@ctory (theme).

GUIDELINES FOR MODEL SELECTION

1. The aesthetic design of the final model is expected from the participants.
2. The Electrical wiring of the models/projects should be as per the Industry Standards. This includes Isolation of Power Supply, wire termination block, use of conduit and proper routing of wires, Use of MCBs, Safety Barriers and other standard procedures as used in the industry.
3. Emergency Stop Switch is compulsory in the model. Models without emergency switch will not be allowed to participate in the competition.
4. Workmanship of the mechanical components and model shall be as per the Industry standard.
5. If any liquid is used in the model for prototyping of the concept, then the model should be leak-proof. Any leaking or spilling of the liquid shall lead to cancellation of participation.
6. Use of 'Mitsubishi Electric' Logo on the model or any other document can only be done after the consent from the respective mentors from Mitsubishi Electric India.
7. External Dimension and Overall Weight of the Model:

   Minimum dimension: 0.5 m x 0.5 m x 0.5 (WxHxD)

   Maximum dimension: 3.0 m x 1.5 m x 2.0 m (WxHxD)

   Maximum weight: 100 kg (excluding FA components from MEI)

MITSUBISHI ELECTRIC FA COMPONENTS SETS

After selection of the Model by the OC, the below hardware will be given to college on returnable basis

Sr. No.	Model	FA Hardware	Description	Quantity
1	FX5U-32MT/ES	PLC	FX5U PLC with 16 inputs, 16 outputs, built in Ethernet, Analog I/O, RS485 Modbus, 2 AI, 1 AO, 4 high speed output, and High speed Inputs.	1
2	GS-2107-WTBD	HMI	7" GS Type HMI, Touch Screen, Ethernet, RS232, etc.	1
3	FR-D720S -025-EC	VFD	Inverter, 1Ø 230 VAC input, 3Ø 200 VAC output, 400 W (0.5 HP), 2.5 Amps, Built-in Modbus (Induction Motor is not included)	1
4	MR-JE-20A	Servo System	Pulse input type servo, 200W, with Servo motor: HG-KN-23J, and necessary cables	1
5	MCBs	LVS	Set of Two MCBs : 6 Amp and 16 Amp	1 set

Note:

a. Use of PLC, HMI and MCBs is mandatory in each project.

b. Servo System and VFD will be given as per the requirement of the proposal. If proposed model does not need it then will not be given to the selected team.

c. If any of the selected teams requires additional I/O Modules for system development, then the Team can purchase the same from Mitsubishi Electric authorized Channel Partners or manage it on their own. This additional FA Hardware must be declared in the proposal document.

d. For Self-Learning of the Products, the Participants can view the e-Learning manuals from the site: http://www.mitsubishielectric.com/fa/assist/e-learning/index.html

e. The Technical details of the mentioned products can be found on the website: http://www.mitsubishielectric.in/fa/factory-automation.php

RULES & REGULATIONS

1. Maximum Two Proposals per institute are allowed and each registration must be done separately with all the necessary documents.
2. If more than two proposals are received from one institute, first two as per registration no. will be accepted.
3. All the participating institutes must be recognised by AICTE/equivalent accreditation.
4. Once the team is registered then replacement of team members is not allowed.
5. All the team members must be regular students of current academic year. Part-time students or evening course students are not allowed to participate in the competition.
6. The selection of teams will be done by the Organising Committee and the decision made by the Organising Committee will be final and binding on all the registered teams. This decision cannot be challenged by the Registered teams/institute.
7. The Mitsubishi Electric FA Components will be given to institutes on returnable basis. The Institute needs to return the components to MEI by 31st March'20. If components are required by the institute for internal presentation / demonstration then the institute will have to request the OC for the same. Kindly submit 'FA Hardware Extension Letter ME Cup 2020' to receive extension up to 30th June 2020. If the institute fails to return the component on the said date as mentioned above or as permitted by OC, then they will be barred from participating in the future competitions.
8. Apart from Mitsubishi Electric FA components as mentioned above under the clause of 'Mitsubishi Electric FA Components Set', all the other components will have to be arranged by participating team on their own cost.
9. Transportation (including transportation of Model) and Accommodation of participants at the Competition venue will be managed by the Participating Team/Institute. The OC will not be liable for any damage caused to their model during transportation.
10. Participants must pay adequate attention to safety when designing and building model so that their model doesn't harm anyone (other teams, OC, audience and so on) at the venue.
11. Participants must not use any kind of inflammables in their designs. This is to ensure the safety of the participants, visitors, OC, judges and all concerns. Such demonstrations can be simulated using Analog signals if possible.
12. All the models that will participate in the Competition must be designed and constructed by the team members only.
13. Participants will arrange all the accessories on their own including air compressors, WiFi, sensors, etc. (if required)
14. Participants will be given an exception in terms of maximum dimensions for their designs with prior approval of the design from the OC. The decision made by the OC will be final and binding to the participants.
15. Teams will be provided with only single phase 230V AC power supply at the venue. Provision for three phase will be made on demand only.
16. The participating team will have to submit their design of models which include mechanical drawings, PLC program, simulation results if any etc. for evaluation. They also need to submit a report along with a presentation which will describe the working of the model and innovation which is achieved. Hard copies of the above documents must be submitted to the OC as per the schedule.

17. Short listed teams (35 teams) have to submit hard copies of the declaration form by 1st Oct 19. Documents to Be submitted to Convenor or Mitsubishi Electric India, Pune. Any team failing to submit the above documents will not be able to participate in the competition.
18. Team members need to show their College ID-cards/Letter of authorization while registering at the venue for the competition failing to which they might not be able to participate in the competition.
19. All the Mitsubishi Electric FA components must be used as per the guidelines given in the respective manuals of the components. If required, the participating team can consult nearby FA centre for any technical assistance or training, List of FA centres is given below in the Contact section.
20. Every team will be assisted by a technical mentor who will support teams on technical queries related to Mitsubishi FA Hardware.
21. If Mitsubishi Electric FA component is damaged due to mishandling and improper usage, then it shall be reported to the OC immediately so that it can be repaired at Mitsubishi Electric's FA Repair centre in Pune. Repairing from third party or local repair for this FA component is not permitted. If this hardware is found beyond repair then the participation of the team will be cancelled and all the components supplied by MEI (including the faulty component) must be returned to the OC.
22. In case the participating team during the course of competition decides to quit the competition for any reason, participating team is bound to inform OC with reason and OC has the discretion to decide the cost, which shall be paid by college/Participating team for FA components along with sponsorship cost which MEI has incurred for such competition.
23. The declaration form submitted at the time of Registration (on or before 15th Sept 2019) will be valid only for the selected teams. For all the other teams, the declaration will be void.
24. During the course of the actual competition or at any phase before that, if any team is found to be using any Unfair practices/methods, the team will be disqualified from the competition. Along with this, if necessary, other punitive actions/measures may be initiated against the erring team - as found viable by the Organising Committee (OC).
25. Participating teams must comply with the discipline and arrangements of the OC, the words and needs should be friendly in a civilized manner.

Sr. No.	Particulars	Deadlines (on or before)	Mode of Submission
1	Proposal documents containing • Project Abstract and Design Proposal in about 2000 words in pdf (1MB), • Bill of material (1MB) • Presentation of Proposal in PDF (6MB) • Registration form • Declaration form	1st Sep'19	Online
2	Submission of Hard copy of Proposal documents (Valid for selected team)	1st Oct'19	Post/Courier
3	Intermediate Progress Report: • Report in PDF, maximum 5 pages of A4 size • Include Image of model under development • Video clip (30 sec to 60 sec), 20 MB in avi/wmv format only	15th Dec'19	Online
4	Video of final working model - 20 MB in avi/wmv format only	10th Feb'20	Online
5	CAD files & PLC/HMI programs	10th Feb'20	Online
6	Final Report – Soft Copy	10th Feb'20	Online
7	Final Report in hard copy with spiral binding or hard binding	13th Feb'20	Submitted on arrival at competition venue.

REGISTRATION

There is no registration Fee for this competition.

Only online registration through **Mitsubishi Electric Cup** portal:

http://www.mitsubishielectric.in/fa/mecup/

Participating team has to submit all required documents with all necessary information, proposal documents and declaration form duly approved by signing authority of concern institute. Incomplete registration will not be accepted.

Online Registration will be closed after 1st Sept 2019 (11:55 pm onwards).

PRIZES & RECOGNITION

All the teams will be given certification of participation from Mitsubishi Electric India. All selected teams will be given a chance to visit our factory in Pune and get a glimpse of the automation world. Along with certificate, the following prizes will be awarded:

Winning team

Prize worth INR 100,000*/- and Winner Trophy

Runner-up

Prize worth INR 75,000*/- and Runner up-I Trophy

Third place

Prize worth INR 50,000*/- and Runner up-II Trophy

APPRECIATION

worth of INR 10000*/- Prize and certificate, Total 15 no. of Appreciation prizes

***- indicates Govt Tax are as applicable**

There are many other prizes to be won in various categories including Most Popular team, Most Innovative Model, Most Energy Efficient Model, etc.

FINANCIAL SUPPORT

The main objective of this allowance is to promote Skill development of students by financially supporting the teams which have reached a particular level of Skill set. This minimum level of skill set will be evaluated and decided by the Judging Committee during the final competition. An amount of INR 10,000 will be provided to all these short listed teams. Decisions made by the Judges and OC will be final in this regard.

VENUE AND CONTACT

VENUE

B.M.S. College of Engineering
Bull Temple Road, Bengaluru – 560019, Karnataka, India.
Landmark : Diagonally opposite to Shree Dodda Ganapati Temple, Basavanagudi.

CONTACT DETAILS

Convenor - Dr. Santosh R. Desai
Dept. of Electronics & Instrumentation Engg,
B.M.S. College of Engineering, Bull Temple Road,
Bengaluru – 560019, Karnataka, India. Phone: 080 2662 2130
Email Id:- MitsubishiElectricCup@bmsce.ac.in
Website: www.mitsubishielectric.in/fa/mecup/
www.bmsce.ac.in

MITSUBISHI ELECTRIC FA CENTRES

Below training centres to be contacted for technical assistance and training on Mitsubishi FA products:

PUNE CENTRE

Mitsubishi Electric India Private Limited
Factory Automation and Industrial Division,
EL-3, J Block, MIDC Bhosari, Pune,
Maharashtra. India – 411 026
Tel.: +91-20-2710 2000
Fax: +91-20-2710 2100

GURGAON CENTRE

Mitsubishi Electric India Private Limited
Factory Automation and Industrial Division,
2nd Floor, Tower A and B, DLF Cyber Greens,
DLF Cyber City, DLF Phase III, Gurgaon,
Haryana, India - 122 002
Tel.: +91-124-4630300
Fax: +91-124-4630399

BENGALURU CENTRE

Mitsubishi Electric India Private Limited
Factory Automation and Industrial Division,
Esquire Centre, No.-9, Ground Floor,
B-Block,Trinity Circle, MG Road,
Bengaluru, Karnataka, India - 560001
Tel: +91-80- 4020-1600
Fax: +91-80- 4020-1699

CHENNAI CENTRE

Mitsubishi Electric India Private Limited
Factory Automation and Industrial Division,
Isana Katima, 3rd Floor, Door No.497 and
498, Poonamallee High Road,
Arumbakkam, Chennai
India - 600 106
Tel: +91-44-49232222
Fax: +91-44-49232249

AHMEDABAD CENTRE

Mitsubishi Electric India Private Limited
Factory Automation and Industrial Division,
204-209, 2nd floor, 31five, Near Vodafone
House, Corporate Rd, Prahlad Nagar,
Ahmedabad, Gujarat, India - 380015

COIMBATORE CENTRE

Mitsubishi Electric India Private Limited
Factory Automation and Industrial Division,
(BMH Srinivas) 2nd Floor, Door No. 1604
Trichy Road, Coimbatore - 641018
Tel: +91-422- 4385606

Email: MEI-FAID-FATraining@asia.meap.com
Website: www.MitsubishiElectric.in