

A WORLD IN MOTION®

**SAEINDIA** The Engineering Society  
For Advancing Mobility  
Land Sea Air and Space  
Society of Automotive Engineers INDIA



A comprehensive  
science,  
technology,  
engineering, and  
mathematics  
(STEM)  
education solution

*Helping  
Teachers bring  
Maths and  
Science to life....*

*Fun, Challenge,  
Teamwork & Leadership*

**22-23 JAN 2016**  
**8<sup>TH</sup> AWIM**  
**NATIONAL**  
**OLYMPICS**

**Venue :**  
**Mahindra Research Valley,**  
Mahindra World City, Chengalpattu, Chennai

**Mahindra**  
Rise.

**EATON**  
Powering Business Worldwide

**CONVENER**

Rajiv Modi  
Mahindra & Mahindra Ltd.

**CO-CONVENER**

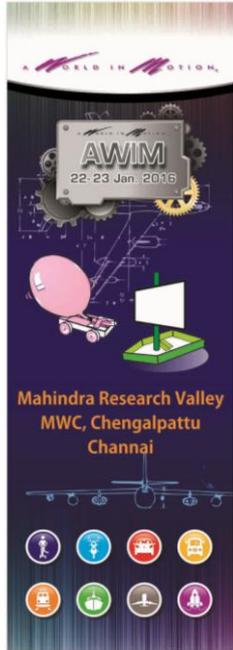
Parag Sonawane  
Eaton corporation

8<sup>th</sup> AWIM National Olympics, MRV – Chennai



## Report on 8<sup>th</sup> AWIM National Olympics, MRV Chennai

“8th AWIM National Olympics” was conducted at Mahindra Research Valley, Chennai (MRV) on 22nd - 23rd January 2016. MRV is located at Mahindra World City, Chengelpet, situated at about 45kms from Chennai Airport. The world class infrastructure of the venue was very conducive for organizing the event. The open lush green lawns with a well-organized sitting arrangement and AWIM themed stage was used for both inaugural and Valedictory functions. A state of art auditorium was used for briefing participants and for other group meetings. The competition tracks were laid in very spacious halls. Spacious air-conditioned reception area was used for toy making by the participants. The Skimmer competition was conducted in Training halls of the “Mahindra Technical Academy” (MTA). Conference rooms were used for presentation by participants to ensure privacy. A special executive lounge was arranged for networking of various officials and sponsors, for enabling AWIM initiative engagement. The hospitality team was very prompt in arranging quality refreshments and food, keeping the participants focused for the competition.



The National Olympics turned out to be a grand success with a participation of **19 cities** from across India. The 19 cities included Bangalore, Chakan, Chandigarh, Chennai, Delhi

NCR, Haridwar, Indore, Jaipur,

### ORGANISING COMMITTEE

Mr. Rajiv Modi	Convener, M&M
Mr. Parag Sonawane	Co-convener, Eaton
Mr. Saurabh Chitnavis	Event Coordinator
Mr. Shailesh Kulkarni	
Ms. Sunayana Kaushik	Secretarial / Help
Mr. P Jayesh	Desk
Mr. L.Radhakrishnan	Communication,
Mr. Shan Prakash	PR, Awards &
Mr. Shikher Bhatnagar	Mementos
Mr. R Chandrasekhar	Finance & Budget
Mr. Gangaraju	Management
Mr. Mohit Tarwani	Participants &
Mr. Somnath Jaju	Guest Management
Mr. Amit Tekwani	Venue
Mr. Srinivasan Sundaraj	Management
Mr. C. Pradeep	Marketing &
Mr. Yogesh Nagendiran	Industry Participation
Mr. C Sankaran Kutty	Event Logistic & Hospitality
Mr. Yogesh Gaikwad	Technical Coordinator
Mr. Sagar Murugkar	Skimmer
Mr. Rahul Gujar	Competition
Mr. Sapan Mittal	Jettoy Competition
Mr. Manoj Girhe	
Mr. K. Sudharsan	Track
Mr. Mahesh Masurkar	Instrumentation

Member : Radhey Kulkarni, Shrikant Sampath, Tushar Batham, Aatmesh Jain, P S Joshi, Raja, Nitin Pande, Ritu Jain, Nirbhay Singh, Soumya Ghosh



Kancheepuram, Mumbai, Nagpur, Nashik, Pune, Pondicherry, Ratnagiri, Rudrapur, Sindhudurg, Thirunelveli and Vashi-Panvel.

47 Teams consisting of 188 students, 47 teachers & 47 Industry volunteers, plus an additional 35 Industry volunteers from different Industries participated in the Nationals. A special mention of one team which participated this year was a team of specially abled children (deaf & dumb). 37 student teams of 6<sup>th</sup> grade in Jettoy challenge and 10 student teams of 5<sup>th</sup> grade in Skimmer challenge participated in the grand finale to win the coveted

title of National Champions.



SAEINDIA, in association with Main sponsor - Mahindra & Mahindra Ltd., & Cosponsor – Eaton India Engineering Centre, Associate sponsors – Turbo Energy Pvt. Ltd., ANSYS Software Pvt. Ltd., Continental Automotive Components (I) Pvt. Ltd., Adventek Fuel Systems Pvt. Ltd., ARAI, Best Group, Dura Automotive (I) Pvt. Ltd., IBDIEN Co. Ltd., Infienon Technologies (I) Pvt. Ltd., KYB-Conmat Pvt. Ltd., Lucas TVS Ltd., Lumax Mannoh Allied Tech. Ltd., Minda Sai Ltd., Natesan Synchrocones Pvt. Ltd., Ramsays Corporations Pvt. Ltd., Ricardo (I) Pvt. Ltd., S M Auto Engineering Pvt. Ltd., TE Connectivity India, Tenneco Automotive (I) Pvt. Ltd., John Deere (I) Pvt. Ltd., EKK Eagle Products (I) Pvt. Ltd., & Mahindra World City club (MWC Club) organized the event to help motivate & channelize the young talents.

The challenge for **class 6 students** was to design an appealing car that performs in a specific way, such as Distance travelled, Weight carrying capacity, longest travel time, Accuracy & Speed. Students experimented with different designs and nozzle sizes to determine their effect on the JetToy's performance. Jet propulsion, friction, and air resistance are the core scientific concepts, which students explore in this challenge.

### STEERING COMMITTEE

Dr. Pawan Goenka	Mentor, Mahindra & Mahindra Ltd.
Dr. Aravind Bharadwaj	President SAEINDIA
Dr. S Thirumalini	Chair, SAEINDIA Engineering Education Board
Mr. Balaraj Bhanot	Chair, SAEINDIA Dev. Board
Dr. R.K. Malhotra	Chairman (Retd.) IOCL
Dr. K.C. Vora	Head ARIA Academy
Mr. Nitin Ranade	Mahindra & Mahindra Ltd., Chennai
Mr. Sanjay Deshpande	Mahindra & Mahindra Ltd., Chennai
Mr. Subodh Morye	Mahindra & Mahindra Ltd., Mumbai
Mr. Vijay Nair	Mahindra & Mahindra Ltd., Mumbai
Mr. N Balasubramanian	RNTBCI, Chennai
Mr. Shanmugam	Design Desk (I) Pvt. Ltd.
Mr. Selvamani S	WABCO (I) Pvt. Ltd.
Mr. Paul Sowerby	Cummins, Pune
Mr. Nitin Agrawal	John Deere, Pune
Mr. R. Srinivas	Ashok Leyland, Chennai
Mr. Sudhakar P	Eaton, Pune
Mr. Atul Kunte	Eaton, Pune
Mr. M. Kannan	TVS, Hosur
Mr. Rakesh Sood	Trim India, Delhi
Dr. Sudhir Gupte	A D Patel Inst. Of Technology, Anand
Mr. Tapan Sahoo	MSIL, Gurgaon
Mr. Alok Jaitley	MSIL, Gurgaon
Mr. G. Vijayan	DDG, SAEINDIA
Mr. Viren Popli	Mahindra Swaraj, Mohali

And the challenge for **class 5 students** was to design a Sail boat that performs in a specific way, such as Distance travelled, Weight carrying capacity, Accuracy, Speed & Turn test. Students experimented with different sail shape, size & construction to meet the specific performance criteria of skimmer. Friction, force, effect of surface area and design are the core scientific concepts students encountered in this challenge.

Despite his busy schedule **Mr. Rajesh Jejurikar**, President & Chief Executive (Farm Equipment & Two Wheeler, Member of Group Executive Board) had informal / off the dais chat with the children before the start of the Inauguration ceremony. He extended his warm welcome to all the participants & wished them good luck. He congratulated the kids on wining the regional event and getting a chance to participate in the National event. In his own special way he explained the kids the foot print of Mahindra & Mahindra Ltd. in India.





The Inauguration session was graced by the presence of distinguished guest & dignitaries. Chief Guest for the evening was Mr. Aravand Balaji (Jt. MD Lucas TVS), and our Guest of Honor guest were Mr. Vishwanathan S (Director TE India) & Dr. Aravind Bharadwaj (President SAEINDIA & Sr. VP Mahindra & Mahindra Ltd.). Among the special invitees were Mr. Vivek Gupta (Head PD Farm Division, Mahindra & Mahindra Ltd.), Mr. Prahlada Rao (Chief Engineer). Some of the Steering Committee members (marked in blue) also were present for the inauguration ceremony to boost the morale of the participants.

The event marked the commencement with “Deep Prajwalan” (Lamp lightning) ceremony by the Chief Guest & the other distinguished guest.



In his inaugural address our Chief Guest **Mr. Aravand Balaji** (Jt. MD Lucas TVS), congratulated SAE, Organizers & the sponsors to create such a great platform for young generation. He also appreciated the kids to display the courage to

come for the event, demonstrate their skills & compete with each other in the right spirit.



**Dr. Pawan Goenka**, (Executive Director & Group President, Automotive & Farm Equipment Sectors, Mahindra & Mahindra Ltd. and past President, SAEINDIA), said, “Mahindra is delighted to be associated with the 8<sup>th</sup> AWIM National Olympics which has received such an enthusiastic response from students across India. We have always focused on education as one of our core corporate social responsibility, as we believe that it ultimately leads to a better quality of life. Competitions such as AWIM which convey the principles of physics and motion in such an innovative manner will go a long way in developing the engineering potential of the youth. My best wishes to all the participating teams”.



**Dr Aravind Bharadwaj**, (President SAEINDIA & Sr. VP, Advanced Technology Mahindra & Mahindra Ltd.), said "SAEINDIA brought AWIM to India with an aim to encourage more School Students to pursue career in Science and Engineering. This year's AWIM National Olympics is being held at one of the best Automotive Research and



Development Centre in India - Mahindra Research Valley, Chennai. We hope this event will motivate the young kids to create Global products in years to come.” He ended his speech hoping that some of children present at the event joins MRV, the “The Temple of Innovation & Creativity” for Mahindra in year to come after they complete their Engineering.



Guest of Honor, Mr. Vishwanathan S (Director TE India) was really amazed to see the energy levels showcased by the young budding engineers. He was happy that such a novel initiative was run by SAEINDIA with the support of the Industry. He wished all the participating students a great success.



**Mr. Rajiv Modi** (Convener) welcomed the Chief Guest, Guest of Honor, SAE fraternity, Mahindra senior leadership, Sponsors, Volunteers, Teachers & all the participants. The children were overjoyed

and fascinated when they were referred to as “Young celebrities” by Mr. Modi. He appreciated the initiative of SAEINDIA & the generous support extended by all the Sponsors for the children who are the future of our Country.



Mr. Modi advised the students, “Do your best, outperform yourself... Not just the competition”. He concluded his speech by saying “*Blow the balloon, push the cart, Blow the wind and sail the Skimmer*”.

**Mr. Parag Sonawane** (Co-convener) welcomed the students to the Nationals and said he loves to be a part of AWIM and will continue to do so by volunteering for AWIM. He said he was really lucky to be the Co-convener for the 8<sup>th</sup> AWIM National Olympics which is hosted at a very beautiful venue & has a very cohesive Organizing Committee. He wished the participants “All the very best for the Competition & May the best team win”.





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After the wonderful speeches by the guest, the inaugural ceremony was ornamented by a host of entertainment programs for the children so that they are stress relieved and feel rejuvenated.



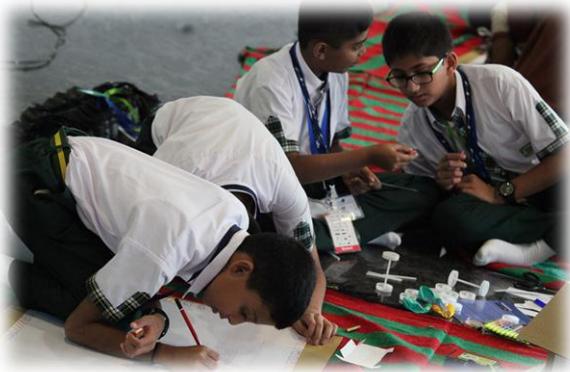
After the cultural program it was the time for the kids to know more about the technicalities and the rules of the game. The Maestro **Mr. Saurabh Chitnavis** (Member EEB & Consultant Mahindra), gave the Technical Insight for both the challenges Jettoy & Skimmer and presented the Competition rules to the participants. While various questions kept on repeating in some way or the other, Saurabh address each questions with patience and helped Kids to understand the criticalities. He reminded the student teams that they are going to compete with other Champs and the only key to success is *“Focus on the Skill, backed by Will to succeed, Consistency in performance and Hard Work”*.



Day two brought a lot of excitement and buzz among children, it was the time when every team gave their best and brazed their Toy of Imagination. Teams spent 2 Hours for preparing different models for different Tests, including the Presentation chart and a dream car. These Toys



were tested on the test track for different performance criteria which could help the track judging team to subjectively evaluate the toys. Went through five defined Test Tracks which measured critical aspects of the Toy. After their track tests, the students had to go through a Presentation round, where teams were given a chance to portray their dream machine and explain jury about its technicalities.





Student teams gave a demo of their concept car with the Team Name, Toy name, logo & slogan of their team and wrote the specification of their vehicles in a presentation Chart. Juries had a tough time rating the teams as the participants were at par & there was just a fine line separating the next best. The aesthetics was one of the most difficult area to be judged, since each futuristic car designed by the students was amazing & innovative.



The jury panel was formed in a very thoughtful manner, involving people from varied profession, diverse background and having passion to engage in special initiatives like AWIM. The members were briefed about the initiative and their role in detail. The **Jettoy challenge** was judged by following members :



Adv. Sanjay Mehta	International Lawyer
Mr. Samson Jose	Sr. GM, HR-M&M
Mr. Kailash Jat	Associate Chief Engineer, M&M
Mr. Srikanth Sudhir	Sr. Principal Engg. (TRIMS) M&M
Mr. Sumantra Barooha	Associate Editor, Autocar Professional
Dr. Christ Paul	Scientist RRCAT





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And the **Skimmer challenge** was judged by another team very vibrant & energetic team of following **Jury members** :

Mr. N Kanagraj	Lawyer
Dr. K. C. Vora	Sr. Dy. Director & Head, ARAI Academy
Mr. Ajay Pillay	GM, Service Engg., M&M

was also presents with the SAE International team.



The 8<sup>th</sup> AWIM National Olympics event was marked with the attendance of the **SAE International Board Members**, making the event all the more special. Mr. Vijayan G. from SAEINDIA



During the valedictory function, the event was blessed with the presence of Dr. Bhaskar Ramamoorthy (Director IIT Madras), as a Chief Guest & Dr. S Thirumalini (MC Member SAEINDIA, Chair EEB), Mr. Velusamy R (Sr. VP-Engines and Component), Mr. Sanjay Deshpande (VP – Testing & Validation, Build) & Mr. Virendra Gaikwad (Eaton) as Special guests.

Mr. Sanjay Deshpande (MC Member SAEINDIA, VP-Testing & Validation, Build), On experiencing the energy levels, Innovative Ideas & boldness of the children throughout the day, expressed a thought that he strongly feels *“India’s future is in the safe hands”*, he wished all the children *“All the very best & a very safe journey back home”*.



Mr. Velusamy R (Sr. VP-Engines and Component), He narrated a small story of Albert Einstein & his invention of Light despite his initial failures in his school journey. He also talked about Mr. John Hunt who had conquered Summit of Mount Everest and his Leadership qualities. He reminded the students that talent has no barriers with the examples of Tenzing Norgay, a Nepalese born Indian Sherpa mountaineer & Sir Edmund Percival Hillary, a New Zealand mountaineer, explorer and philanthropist.

Dr. Bhaskar Ramamoorthy & Dr. S Thirumalini were welcomed by Mr. Rajiv Modi (Convener) & Mr. Parag Sonawane (Co-convener) by offering them a bouquet of flowers.





**Dr. S Thirumalini** (MC Member SAEINDIA, Chair EEB) – Welcomed the students to the world of Engineering & also said that the Universities are waiting for them with open arms. She promised the volunteer & children that the Engineering Education board (EEB) will introduce new challenges year on year and make AWIM more popular in India.



**Dr Aravind Bharadwaj** – Request the support of all the Sponsors for building a corpus so that such innovative teacher administered, volunteer assisted program that brings science, technology, engineering and mathematics (STEM) education to life for students is sustainable & it can be used for the growth of AWIM in India.



**Dr. Bhaskar Ramamoorthy** (Director IIT Madras) – He expressed that all those who have come to the competition are a winner already. He insisted that the students keep their questioning mind on &

their Quest for knowledge should never end. He was really impressed with the AWIM initiative and said, “Why only think of going to US for participation, I am sure that one day the World Competition will come to India.



**Mr. Rajiv Modi** (Convener) – Appraised the OC team for its detailed / minute workout of the event. He said ***“If you have liked anything at the event, please express it to all the OC members & If you didn’t like anything, Do let me know..... Rajiv Modi is in front of you. I am the Convener and responsible for everything that did not go well in organizing the event & the OC members are responsible for everything which has gone well”.***



The Event was first ever witnessed by about 35 journalists from regional media in India and were jointly addressed by Convener Mr. Rajiv Modi, SAE India President Mr Aravind Bharadwaj and



Dr. Arun Sampathkumar. The media was very impressed by the Initiative and the event was covered by them in various local publications. A summary of media coverage has compiled and is available separately.

And **The Millenium School, Mohali, Punjab** emerged as the Overall Winners for **Skimmer Challenge**.



It was a very long and action-packed event day, during which the student teams worked hard to prove their skills & their worth to clinch the title. There was also a sense of stress in the children during Valedictory function which was studded with suspense, excitement & melodrama. In the end everyone cheered the winning teams and congratulated them.

Team from **Saupins School, Chandigarh** emerged as the Overall Winner in **Jettoy Challenge**, who would now participate in the SAE World congress which will be held in Detroit, USA scheduled in April 2016.





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The satisfied and joyful faces of all participants, teachers, volunteers and various dignitaries were testimony to the success of event. A sense of fulfillment was spread in the air and the OC witnessed many of them expressing their regards and gratitude to the initiative.

The Host, Mahindra Research Valley stepped forward and invited all participants for Industrial cum educative visit to R&D facilities which has developed several iconic and well known automotive and agricultural products.

Despite the stressful condition that the children faced during the National Event the children were ready the following day (Sunday) at 09:00 am, to visit Mahindra Research Valley, Chennai.

They were thrilled to see the state of the art research facility. The Hi-tech equipment's, Machines, Test rigs, Test Tracks and the kind of an environment in which engineers work was all mesmerizing for the kids.

To most of the children and the teachers, the R&D visit was a kind of dream come true. For them it was their first visit to such a large scale infrastructure which has developed and which has delivered several ingenious automotive and most of agricultural products. MRV R&D Centre is also known as, "The Temple of Innovation & Creativity" in the Mahindra group.

Most of the students went back to their respective home town with a dream to become an engineer and aspiration to work for Mobility industry.

Here, we would like to make a special mention of the support extended by all the sponsors without which the event would not have been a grand success. The leads of all the sponsoring organizations expressed a sense of happiness to be able to contribute their share in the support of such a great initiative & assured a long term support to AWIM.



With this, we conclude our 8<sup>th</sup> AWIM National Report and looking forward for exponential growth of initiative in the times to come.

*With Best Wishes,  
Compiled by Saurabh Chitnavis  
on behalf of SAEINDIA & OC Team.*





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**Organizing Committee :** The Team which worked relentlessly to ensure that the event is a grand success.



**Jury for Presentation Round :** A very brilliant mix of Jury who ensured that the team with the best presentation skill wins.



**Overall Winner Skimmer**

The Milenium School, Mohali, Punjab



**Overall Winner Jettoy**

Saupins School, Chandigarh



**1st Runner-up Skimmer**

Swami Vivekanand Vidya Niketan, Nasik



**1st Runner-up Jettoy**

The Milenium School, Mohali, Punjab



**2nd Runner-up Skimmer**

Millennium National School, Pune



**2nd Runner-up Jettoy**

Dnayanvardhini English Medium School,  
Chakan