Gokaraju Rangaraju Institute of Engineering and Technology

EVENT SUMMARY REPORT

Nature of the Event (Workshop / FDP / Seminar / Guest Lecture / Talk GD/ Training Program / Quiz / Presentation/ Industrial Visit)	Industrial Visit
Title / Theme of the Event	Industrial Visit, ISRO, NRSC, Shadhnagar.
Details of the Coordinator	A Vinay Kumar
Date on which Event is held	1st Mar 2019
Target Audience (Teaching Faculty / Non-Teaching Faculty / Students)	Students
Summary of the Event	ISTE has taken 113 students of EEE of 3rd year on an innovative and ingenious industrial trip to NRSC (National Remote Sensing Cell), Shadnagar on the occasion of National Science Day on 1st March 2019. The NRSC is running Vikram Sarabhai Centenary programme which includes space related academic and research programmes. This programme offered a new opening and an opportunity for youngsters to explore a new career and research option

After a long journey of 2 hours from our college, we entered NRSC at 11:30am, they took us to an auditorium where a quiz was conducted on Vikram Sarabhai's achievements at NRSC-ISRO. They also played a video on Vikram Sarabhai's life history and NRSC's establishment and its accomplishments. Then, we were headed to an auditorium where the images of different geographical areas were displayed and they've explained how these images help in different situations like planning a city, finding shortest path to the safest places during natural calamities. They demonstrated the monitoring of satellites and the measures they take to avoid collisions between two satellites revolving round the earth.

Later, we were made to explore the outdoors of NRSC-ISRO where antennas and solar panels were located. They illustrated the functioning of antennas and solar panels and cleared all our doubts regarding satellites launching, antennas movement, solar panels working and etc.

These are few points we have inferred from the videos they have displayed and the points they have deciphered :-

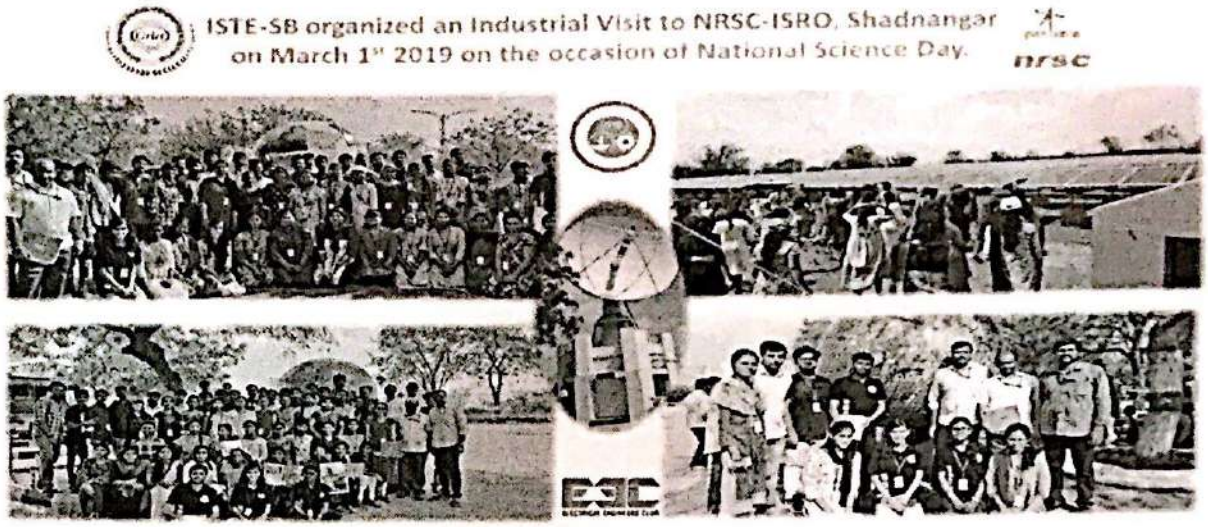
- The NRSC was first established at Hyderabad in 1974.
- The satellite ground station was first set up in 1979-1980.
- NRSC provides satellite and area data services in India.
- It launched 12 Indian and 7 foreign satellites in a span of 30 years from 1988-2018.
- NRSC has 2.7 metre compact antenna system.
- The information on surroundings is first captured through cameras, which in the form of electromagnetic radiations are sent to the antenna.
- The registered information is then stored in the computer memory.
- Remote sensing deals with space technologies and monitoring remote areas for detection of any calamities.
- Remote sensing involves geographical mapping that incorporates all the engineering branches and disciplines.
- NRSC has 4 antenna systems stationed track four different satellites.
- ISRB-ISRO satellites recruitment board is an exam for the students of ECE and EEE departments to get into for NRSC.
- NRSC antenna is 7.5 m in diameter.
- An antenna has 3 basic elements and they are Mechanical,

- The mechanical element has 2 axes- Aximuth and Elevation.
- It also contains a hyperbolic reflector which collects the info and converts it into electrical signals.
- Information is generally obtained through IRS(Indian remote sensing) satellites, which are connected control room in a fibre optics.
- An optical encoder is also present which sends signals based on the position angle.
- The reference angle is generally considered at 0 degree north.
- Serve consists of 2 metres for axis.
- We require 2 metres to avoid the damping effect.
- Auto-tracking mechanism in antennas is based on the Reference Angle which tracks the signals of the satellites.

Solar panels:-

- NRSC demand of energy – 17000AW but only gets 300AW.
- Each solar panel generates 30 volts, whereas the requirement is 700 volts. Hence, panels are connected to fill this necessity.
- 20 panels approximately are connected which is called a string.
- Solar panels can be of two kinds.
    - On grid- solar energy is generated only in presence of light.
    - Off grid- solar energy is generated in the absence of light too.
- There are 2 types of powers- reactive and active. We use capacitor banks for reactive power generation.
- 1 inverter includes 4 strings. Input consists of 8 cables and output consists of 1 cable.
- Disadvantage of series connection is if one panel is damaged, the energy is not generated further.
- Hotspots are generated in solar panels due to shadows. In order to protect them from the hotspots, diodes are connected in series.

NRSC team has been very cooperative in helping the students, explaining them the various advancement in technologies and career opportunities in the organization. Students were very

	enthusiastic in listening to everything that happens in a remote sensing centre. The feedback we got from the students was very positive and they also wanted to participate in these kind of visits. This visit is related to Solar and Wind Energy Systems 
POs attained with this Event (number and description)	**PO1**: Ability to apply knowledge of mathematics, science, and engineering. **PO3**: Ability to design a system, component, or process to meet desired needs within realistic constraints. **PO4**: Ability to function on multi-disciplinary teams. **PO5**: Ability to identify, formulates, and solves engineering problems. **PO6**: Understanding of professional and ethical responsibility. **PO9**: Recognition of the need for, and an ability to engage in life-long learning. **PO10**: Knowledge of contemporary issues.

Signature of Coordinator

Signature of HOD

List of Students Participated

S.No	Name
1	ADULAPURAM SRAVYA
2	BUDDULA MADHURI
3	AGGARAPU HARI KRISHNA
4	MANDULA SAI KUMAR
5	B MANIDEEP
6	B SAI VASUDEVA
7	YELASOJU KRUSHNA
8	YELISETTY GOPAL
9	BANOTH GEETHA
10	Batta Vandana
11	VUPPALAPATI YASHWANTH KALYAN
12	BOLLUR YASHWANT
13	BOORA AKASH
14	SAREPAKA SUSMITHA
15	C KALLASH SAGAR
16	C Sahithi Reddy
17	C VINEETH
18	KONDA ANIL KUMAR
19	CH JAYANTH CHANDRA
20	CH RANA SAGAR
21	CH SAHITHI
22	Chatla Rakesh
23	G NANDINI
24	DESABATHINA TEJASWI
25	EARAVATHRI HARSHAVARDHAN
26	G KRISHNA VAMSI
27	G MOUNIKA
28	BUDUMA SHALINI
29	CHEGONDA RANASAGAR
30	Gampala Pranasvini Harini
31	Gandla Navya
32	KONA BHAVANI
33	GEORGE MICHAEL
34	GORENKALA MEGHA SAIKRISHNA
35	GUGULOTH SUMAN
36	JUBEDHA
37	JULURI RONITH PRADYUMNA

S.No	Name
38	K AJAY
39	K ANUSHA
40	K BENNY HINN
41	K Geethika
42	K GNANESWAR
43	KALAKA GOUTHAM
44	KALYANAPU VENUGOPAL
45	KAMBA AVINASH
46	K Raghavendar
48	Kanakapudi Sunny
49	KANDULA SRINANDANN
50	Kasani Keerthi
51	KATTA MOUNIKA
52	KHALLEPALLI BANU WERMA
53	Kokkula Sumith Goutham
54	KOTHA PRASAD
55	KOTHA RAMYA SREE
56	KOUTIKE ROHITH KUMAR
57	KUNTA NIKHIL REDDY
58	M PAUL SAM
59	M RUPESH
60	M SHOWRI SHREYANS REDDY
61	MADARI VINOD KUMAR
62	Madhavapeddi Sridivya
63	MALAVATH JAIPAL
64	MANGANAPALLY ROOPA
65	Mangipudi Sri Lalitha
66	MANNELI KRANTHI KUMAR
67	MARELLA V RAJ KUMAR
68	MASANNAGARI RAKESH REDDY
69	MATHI VIJAYA NAGASREE
70	MIDHUNA GARAPATI
71	MOHAMMED DANISH UMER
72	MUNDRA SUBHASHINI
73	MUPPIDI YASHASWINI
74	N NISHANTH REDDY
75	N SAI TEJA REDDY

S.No	Name
76	CHUPPALA ROHITH RAVI RAJA
77	NALAGAMA MALATHI
78	O SRIKANTH
79	P JATIN
80	P JAYARAJ
81	P N SHASHANK
82	P SHRAVAN KUMAR
83	Palapala Harika
84	BOBBA SOWMYA
85	Pitchuka Naga Lakshmi Sowmya
86	MALAKA UDAYASAGAR
87	MALAVATH JAIPAL
88	MANGANAPALLY ROOPA
89	R Mounika
90	R V SAI TARUN
91	R. Raashik Arun
92	S SOUJANYA
93	SAI HAVANIKA
94	SAKETH M
95	SAMREEN SULTHANA
96	MOHAMMED KHALEEL
97	MUKKAMULA RAMYA SREE
98	MUNDRA SUBHASHINI
99	Sidirala Surya Teja
100	Songani Keerthi
101	PUDOTA ADITYA CECIL RAJ
102	SURYA SANJAY BANDARI
103	PERICHARLA NIHARIKA
104	THIGULLA ASRITH
105	MUNAGALA KARUNYA
106	Tripta Gharai
107	V RAHUL
108	V SHASHIDHAR
109	Vallabhaneni Athish Chowdary
110	VARAPARLA AVINASH
111	Velichala Kalyani
112	VUPPULA SUMANTH REDDY
113	Y VENKATA RUPESH BHARADWAJ