



SSIP



**A Report on Visit to
“Vadodara Smart City – Command and
Control Centre and GTU Innovation
Council Incubation Centre”**

on

20/07/2019

Sponsored by

(SSIP Center, Vallabh Vidyanagar)

Organized By

Electronics and Communication Department

BVM Engineering College

(Affiliated to Gujarat Technological University)

(An Autonomous CVM Institution)

Summary Table

Visit Place:	1. Vadodara Smart City – Command and Control Centre, Badamdi Baug, Babajipura, Vadodara, Gujarat 390001 2. GTU Innovation Council – Incubation Centre, In the Campus of Govt. Technical High School, Nr. M.S.University, Vadodara		
Visit Experts:	1. Mr. Manish Bhatt – Director-IT VMC 2. Mr. Nikhil Suthar – Officer on Special Duty, GTU GISC Coordinator		
Name of Principal of the Institute:	Dr. Indrajit Patel		
Department Name of the Institute:	Electronics and Communication		
Name of Head of the Department:	Dr. Bhargav C. Goradiya		
Visit Coordinator:	Dr. Darshankumar C. Dalwadi		
Year/Semester of the Students	2 nd Year, 3 rd Year & 4 th Year		
Specific Subject under which Visit organized:	Vadodara Smart City – Command and Control Centre and GTU Innovation Council Incubation Centre		
Professional body under which visit organized:	SSIP, Vallabh Vidyanagar		
Date and Time of Visit:	Date: 20/07/2019 Time: 11:00 AM to 05:00 PM		
Accompanying Staff Name:	1	Dr. Bhargav C. Goradiya	
	2	Dr. Rajvirsinh C. Rana	
	3	Dr. Darshankumar C. Dalwadi	
	4	Prof. Ghansyam B. Rathod	
Contact Information of Staff:	No.	Contact No:	Email Id:
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Total No of Students:	40		

The industrial visit to Vadodara Smart City – Command and Control Center and Incubation Center was conducted on 20th July 2019. The visit was organized under SSIP Center, Vallabh Vidyanagar with the support from Dr. B. C. Goradiya (Head, EC Dept. & Nodal Officer SSIP) and Dr. R. C. Rana (SSIP Coordinator). We departed at 11:00 in the morning from the BVM Engineering College. There were 40 students of EC department along with four faculty members Dr. B. C. Goradiya, Dr. R. C. Rana, Dr. Darshankumar Dalwadi and Prof. Ghansyam B. Rathod went to this visit. We have reached to Vadodara Smart City – Command and Control Center around 12:45 pm.



At BVM Engineering College, Vallabh Vidyanagar

At around 01:00 pm, the whole session of General Introduction and the Briefing about the implementation smart city concept and its various applications was conducted by Mr. Manish Bhatt (Director, VMC) of Govt. of Gujarat.

Introduction:-

- "100 Smart Cities Mission" was launched by Prime Minister Mr. Narendra Modi on 25 June 2015. A total of ₹98,000 crore (US\$14 billion) has been approved by the Indian Cabinet for the development of 100 smart cities and the rejuvenation of 500 others. ₹48,000 crore (US\$6.9 billion) for the Smart Cities mission. It ensure that 20 smart cities will be ready till 2021. But there some cities that are already ready. Vadodara is one them.

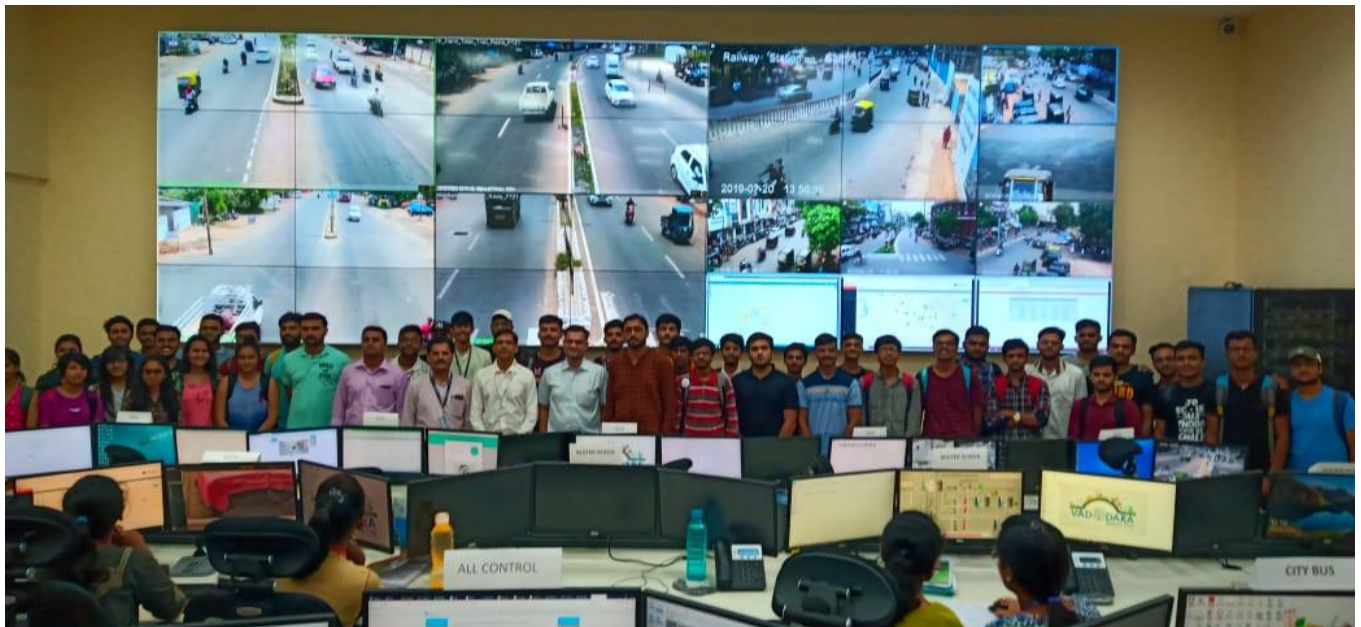
Brief about Implementation of Vadodara Smart City:

- The Vadodara smart city network uses MESH TOPOLOGY for the city communication having 250kms of optical fibering.
- The control center itself uses STAR TOPOLOGY for its internal communication, having CCTV, Water SCADA, GIS, Video wall controller, Access control, City bus, IBM-IOC, ATCS, CCTV-ITMS, PA-ECB and Administrator as node and ALL CONTROL being as their SWITCH.
- The city in total has 900 cameras and it uses GET (Get Enforcement Troop) system, in which if any law/rule break is captured in the cameras then the control center contacts GET and required action is taken. The control system is linked with the RTO. Therefore, by identifying the owner of the vehicle, the challan is directly sent to his/her house.
- The city has 21 Dashboards. So, in case of any emergency, the dashboards are used to communicate with the people. The city has also installed Emergency call management system in areas where there is more traffic. There are several Public announcement systems installed in the city.
- The city also has Environment sensor in several areas that measures temperature, RH, AQI (Air quality index) and PM10 (Particulate matter). These sensors also measure CO, SO2, NO2 and O3 present in the environment.
- The smart city developers also developed their own city app, called as MY VADODARA APP. It is a platform where the citizens of Vadodara can see statistics of all the smart city system and can register complain by just clicking a picture of the problem and post it on the app. Then, the concerned officer will come and will examine the problem then takes steps accordingly.
- The city has 170 city-buses and has a very nice management system for it. Where the control system members know that how many and which asset is active, at rest and non-active. They also have a complete monitoring on the route of every asset and history of it. They are also known with the kilometers travelled by any bus and average speed of the bus.
- The city has also installed Garbage Collection System. A door-to-door system where the routes of the garbage collector truck are predefined and uses GPS tracking. The control center monitors this system by looking into satellite map. If any truck misses any location, it is known in real-time. Hence, the system is micro-level accurate.
- The city also has Geographical Information System (GIS). It is a 20-22Cr project and a door-to-door module. It captures 0.2 resolution image. This system includes gas-line map, having information of like the diameter of each and every pipe. It also has Plan Dig Request (PDM), where a line will be drawn on the map where the digging is to done (from its start point to its end point). It also knows that which person will do the work and at what time and how he/she will do. As in Vishwamitri river is known for having 300+ crocodiles. Therefore, from this system, the city gets to know that where actually the crocodiles are. This system also knows that the property is rented or not and which cable connection is used by the citizens (benefits in tax revenue).
- WATER SCADA system a 27Cr project. Uses C-programming as backend. Water contents are known, including its PH. Also, knows that how much water loss is happening. The water management system has 80 valves. The system also knows the tank capacity like how much the tank is filled. The system is divided into 4 zones (North, South, East and West) has diagnostic system.
- It has IBM-IOC installed, which knows whether the installed devices are properly working or not.
- It has also installed Video Management System (VMS) for garbage management. It uses motion sensing cameras, where the person/group throwing garbage is/are identified and then is/are fined.

- Now, the control center has a Data storage room having a capacity to store 2 Petabytes of data. The size of the data of just one day is around 1 Terabytes.



At Vadodara City – Command and Control Centre



At Smart City – Command and Control Section

Visit to GTU Innovation Council – Incubation Centre (Vadodara):

After taking the lunch, we went to GTU Innovation Council – Incubation Centre at around 03:00 pm. Initially introduction and discussion regarding various start up's was discussed by the Mr. Nikhil Suthar. He has motivated the students for startup related activities. There were total 250+ startup governed by GTU Incubation Centre, Vadodara. We have seen the demonstration of some of the startup at incubation centre like smart license system, adaptive bike and many more.



Introduction of Incubation Centre, Vadodara by Mr. Nikhil Suthar





Felicitation Ceremony
Demonstration of various startups





List of the students attended the Visit

Sr. No.	Name	ID NO	Mobile No.	Attendance
1	Vatsa Dave	17EC437	8511154069	Vatsa
2	Vishvas mirani	17EC436	9978715127	Vishvas
3	Udit	17EC437	7433007847	Udit
4	Parikshit Mishra	18EC601	9429219647	Parikshit
5	Saundarya Jain	16ET403	7016501509	
6	Urvi Kosta	16ET450	9662172763	
7	Punita	17EC601	9736062544	
8	Jaimin Shimpi	1811441	9156601965	
9	Rutvik Patel	17EC421	9755251039	
10	Singh Yash R.	17EC451	7984352413	
11	Roshni Hirani	17EC456	8140673499	
12	Samir Barot	17EC442	7623987591	
13	Niharika Pandey	17EC459	7567542539	
14	Sanghvi Singh	17EC455	9687320203	
15	Sweeta Gondalya	16ET452	8155801613	
16	Meha Dave	17EC420	9821156604	
17	Naman Shukla	17EC463	8320578920	
18	Jain Dharmik P.	16ET436	7984122146	
19	Disha A. Dangi	17EC461	9901129809	
20	Prerana Patel	17EC458	7698394932	
21	Upasana	16ET433	9512530052	
22	Avus Pratiapati	18EC450	9099817436	
23	Khanjan Narthak	18EC405	9428891767	
24	Poonam Lalwani	17EC440	9726285026	
25	Shaunak Vyas	17EC428	9979772272	
26	Shreya Nehra	17EC430	9664834522	
27	Shail Souti	18EC423	9099332882	
28	Abhijeet Karmakar	17EC430	9638940994	
29	Prathmesh K. Dave	18EC419	6355050545	
30	Hrush Dadi	18EC435	9825010767	
31	Raveena	17EC433	9660357303	
32	Drashti	17EC426	9601607483	
33	Neha Dave	17EC420	9821156604	
34	Vishva Kamra	18EC437	9033857222	
35	Siddhant Pai	18EC416	8134059805	
36	Aarati Patel	17EC432	9775111822	
37	Vedant Dakhania	18EC432	9725583036	
38	Gaurav Karandya	17EC449	9173903805	
39	Sankalp Mane	18EC441	7069420096	
40	Normal Patel	16ET413	7041611333	
41	Avi Patel	16ET401	9409081160	
42	Devesh Bhaduria	16ET431	9408621713	
43	Ashish Pandey	18EC440	8128406537	
44	Arka	18EC409	8160203186	
45	Shashank Pandya	17ET4015	9157460835	
46	Deep Patel	18EC439	9512816955	
47	Ram Tivary	18EC448	9106767441	
48	Pranesh Patel	18EC426	999908263	
49	Nishwari Sharma	17EC427	8160118280	
50	Jay Lakhotra	18EC444	9824557725	
51	Abhishek Pattanaik	16ET451	8469822158	
52	Amish Shah	16ET449	9409402209	
53	Nirbhay Chaplot	18EC446	7202084922	
54	Pratham	18EC430	9979301390	
Rubik		18EC451	6385928686	

56.	AKHI Rabadiya	17EC407	9109959968	AKHI
57.	Deep Salchiya	17EC405	7189816087	Deep
58.	Harsh Nawadiga	17EC410	9031807615	Harsh
59.	Yagvik	17EC409	9510403995	Yagvik
60.	Nirav	17EC419	9904711107	Nirav
61.	Hansini Patel	18EC400	7621004427	Hansini

Visit Coordinator:
Dr. Darshankumar C. Dalwadi

Head, EC Dept.
Dr. Bhargav C. Goradiya

SSIP Coordinator
Dr. R. C. Rana

*****The End*****