



IoT/M2M for Digital India and Smart City

Concepts

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1

Can the Internet of Things pave the way for a revolution in Governance?

2

Can shared data really democratise democracies?

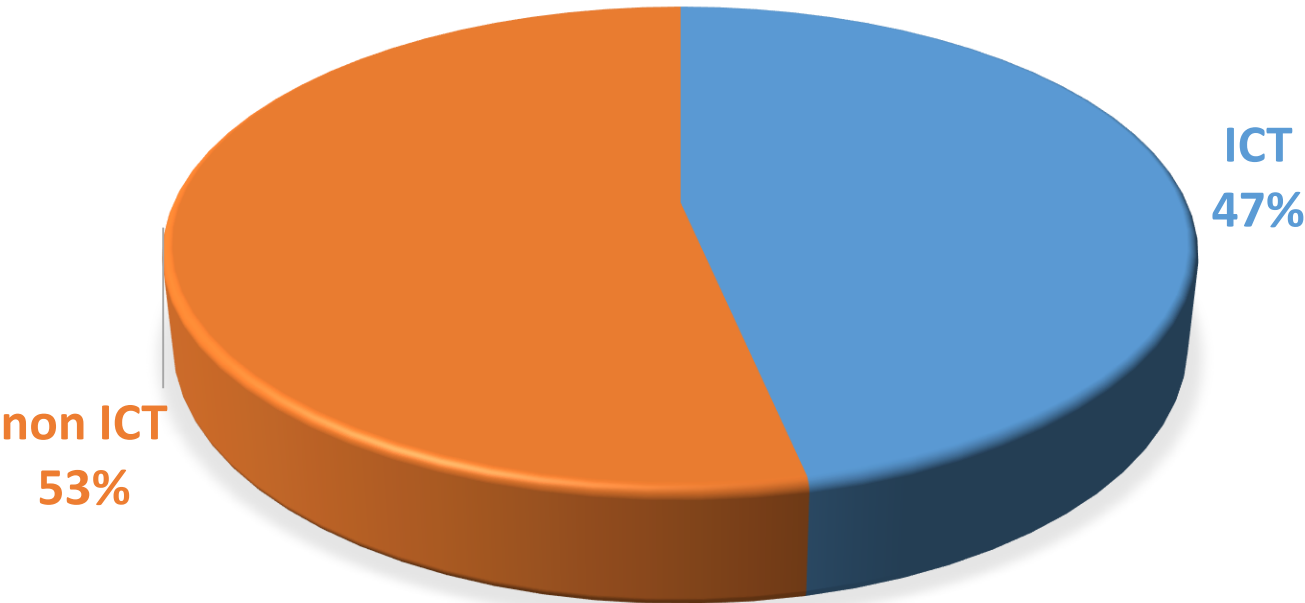
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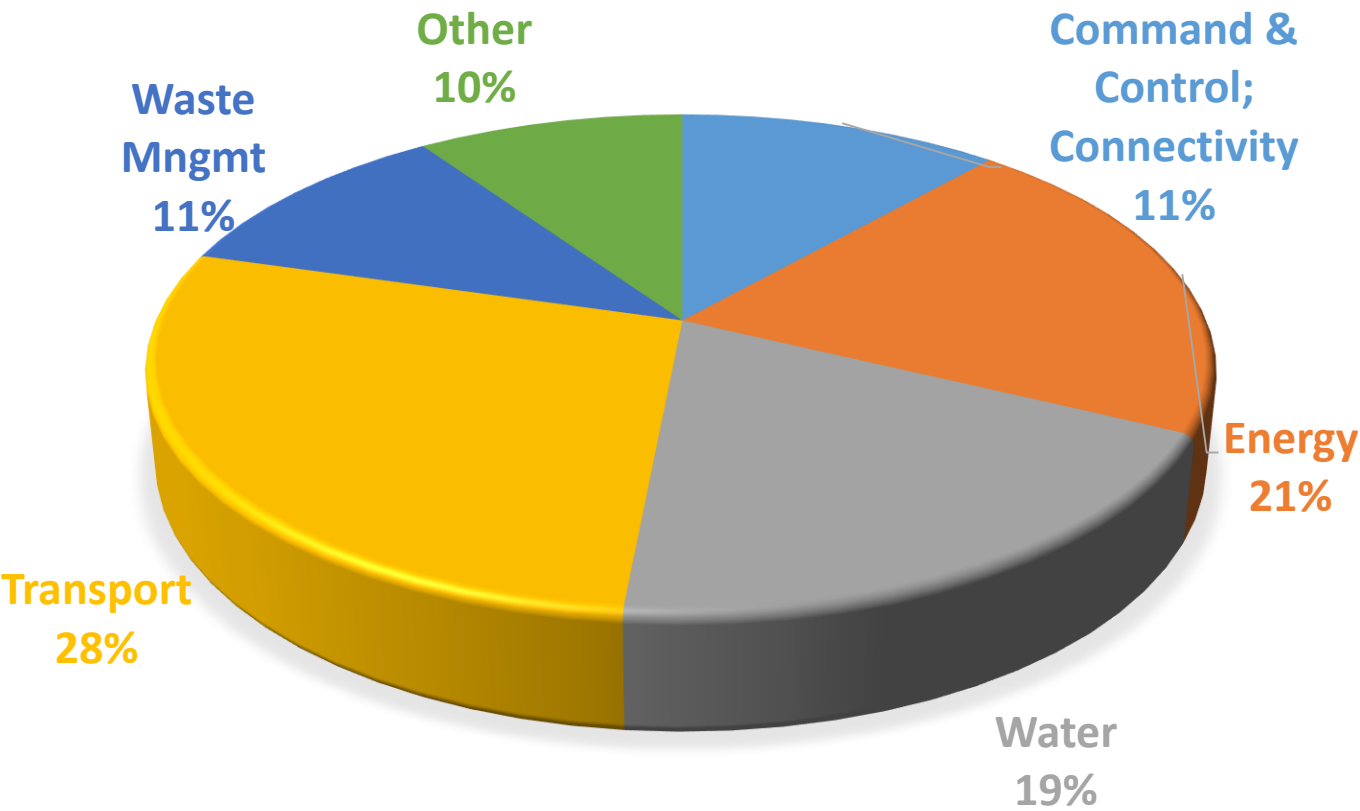
From an analysis of 90 SCP's [First 20, next 13, following 27 and the recent 30]

Type	Unique Use Cases
ICT	44
Non-ICT	50

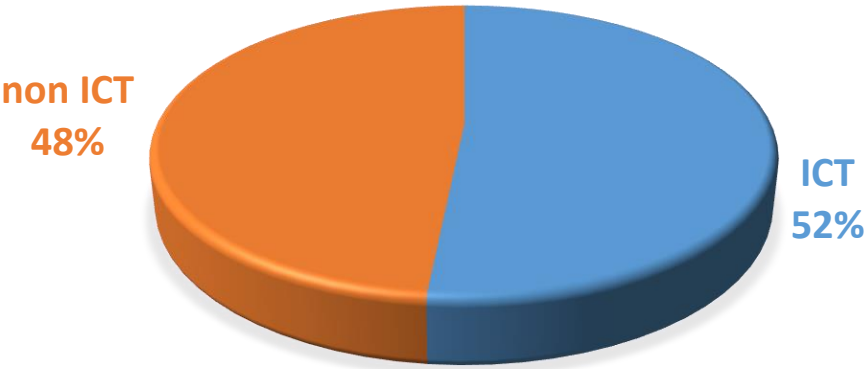


Combination of ABD and PC

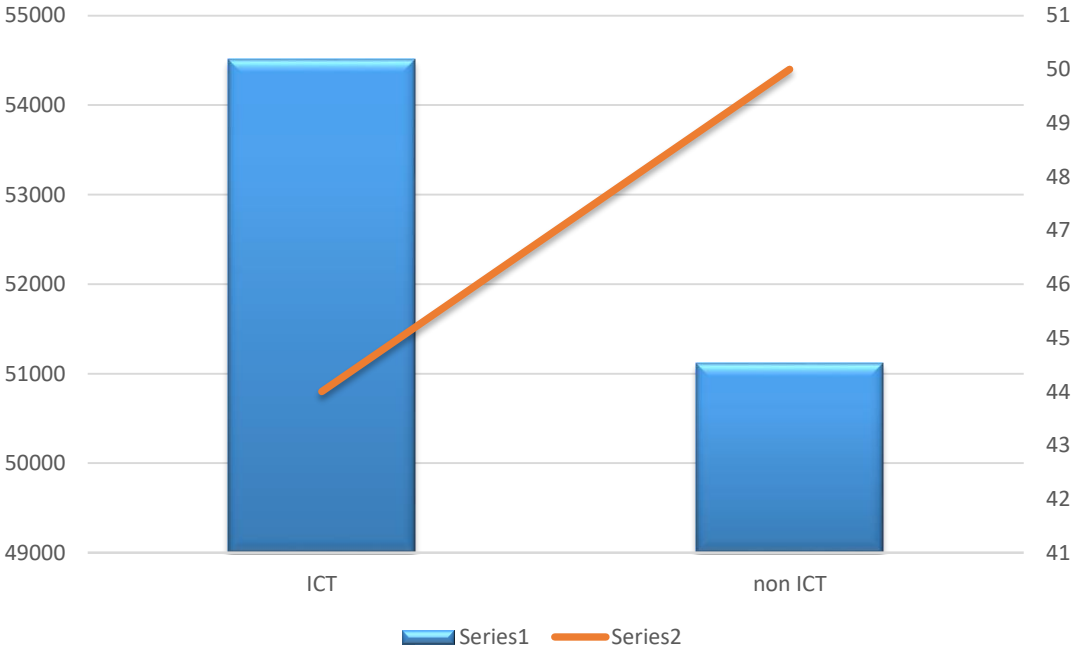
Solution Category	Budget
Command & Control; Connectivity	6,265.11
Energy	11,288.16
Water	10,517.12
Transport	15,273.98
Waste Mngmt	5,952.62
Other	5,210.08



Type	Budget (Crores)
ICT	54,507
Non-ICT	51,112



to Use Cases



Command & Control Centres; Connectivity

ABD														
Seamless wifi connectivity / Wifi Hotspots / Wifi Lounges	Chandigarh, Lucknow, Raipur	3	21.22	Ahmedabad,Bhubaneshwar, Chennai, Indore, Jabalpur, Jaipur, Kochi, NDMC	8	212.88	Agra, Ajmer,Gwalior, Kanpur, Namchi, Nagpur, Salem, Vadodara, Varanasi, Vellore	10	103.25	Thiruvanthapuram,Srinagar,Sagar,Karnal,Tiruppur,Thoothukudi	6	35.33	27	372.68
Centralised Command Centre / Intelligent operations centre	Lucknow, Ranchi	2	230.02	Davangere,Indore, Jabalpur,Kochi,Visakhapatnam, NDMC	6	121.92	Mangaluru,Vellore	2	41.00	Puducherry	1	63.00	11	455.94
Provision of Optical Fibre Cable	-	0	0.00	-	0		Agra, Kohima, Thanjavur	3	7.65	Puducherry,Shimla	2	15.27	5	22.92

Pan City														
City Management Center, Command Center, Integrated Operations Center, Smart Unified Governance	Agartala,Chandigarh, Dharamsala, Faridabad, Lucknow, Raipur, Ranchi, Warrangal	8	288.23	Ahmedabad, Belgavi, Bhopal, Bhubaneshwar, Indore, Ludhiana, Pune, Surat	8	674.30	Agra, Ajmer, Aurangabad,Jalandhar, Gwalior, Kohima, Madurai, Mangaluru, Nagpur, Rourkela, Salem, Shivamoga, Thanjavur, Tirupati, Tumakuru,Ujjain, Vadodara, Varanasi	18	1181.89	Thiruvanthapuram,Patna,Karimnagar,Muzaffarpur,Puducherry, Sagar,Karnal,Satna,Shimla,Tiruppur,Pimpri-Chinchwad,Dahod,Tiruchirapalli,Jhansi,Gangtok		707.71	34	2852.13
City Network, City Communications	Chandigarh, Warrangal	2	40.04	Belgavi, Indore, Surat	3	358.00	Gwalior, Nagpur, Rourkela, Thanjavur, Tirupati, Varanasi	6	326.32				11	724.36
City Data Center	Chandigarh, Dharamsala	2	25.14				Rourkela	1	25	Karnal,Bengaluru,Tiruppur,Jammu,Thoothukudi		39.87	3	90.01
City Portal, One City platform, Dashboard, MyCity	Chandigarh, New Town Kolkata, Raipur	3	63.18	Indore, Kochi	2	31.00	Gwalior, Kalyan-Dombivali, Kanpur, Namchi, Rourkela, Varanasi	6	154.25	Puducherry,Srinagar,Dehradun		83.05	11	331.48
City Wide Wifi	Agartala, Newtown Kolkata	2	213.85	Belgavi, Surat	2	265.00	Kalyan-Dombivali, Kohima, Thane, Thanjavur, Tirupati	5	81.32	Patna,Karimnagar,Gandhinagar,PimpriChinchwad,Gangtok		210.00	9	770.17
Optical Fiber Cable	Agartala	1	30.04	Jabalpur	1	100.00	Rourkela,Thanjavur, Varanasi	3	99.04	Karnal,Tiruppur,Pimpri-Chinchwad		66.04	5	295.12
Information and Communication System / Contingency	Agartala, Bhagalpur	2	28.43	-	0	0	-	0	0				2	28.43
e-Governments Applications	Chandigarh, Dharamsala	2	55.97	-	0	0	-	0	0				2	55.97
ONE CITY MOBILE 'D-APP'	Dharamshala,Newtown Kolkata	2	34.27	Jaipur, Kochi, Pune, Surat	4	101.5	Agra, Gwalior,Kalyan-Dombivali, Kohima, Mangaluru, Rourkela,Thanjavur,Vadodara, Varanasi	9	79.1	Srinagar,Karnal,Tiruppur,Pimpri Chinchwad,Jammu,Thoothukudi,Gangtok		51.03	15	265.90

ABD														
LED Street lights / Solar Street Lights / Smart street lighting	Bhagalpur, Imphal, Lucknow, New Town Kolkata, Panaji, Port Blair, Raipur, Ranchi, Warangal, Faridabad	10	132.43	Pune, Jaipur, Kochi, Solapur, Davanagere, Indore, NDMC, Belagavi, Chennai, Ludhiana, Coimbatore, Surat	12	169.29	Aurangabad, Gwalior, Huballi-Dharwad, Kalyan-Dombivali, Kanpur, Kohima, Kota, Madurai, Namchi, Nashik, Rourkela, Salem, Thane, Tumakuru, Vadodara, Vellore	16	437.05	Puducherry, Srinagar, Satna, Shimla, Tiruppur, Jammu, Thoothukudi	7	122.17	45	860.94
Renewable energy Initiatives/ Energy Efficiency / Smart Energy	Agartala, Raipur, Faridabad, New Town Kolkata, Warangal, Bhagalpur	6	219.83	Bhopal, Bhubaneswar, Surat	3	156.75	Kalyan-Dombivali, Kota, Nashik	3	292.20	Karimnagar, Muzaffarpur, Karnal, Dahod	4	167.05	16	835.83
Smart Grid	Port Blair	1	21.20	Pune, Chennai	2	364.80	Nagpur, Rourkela, Varanasi	3	171.00		0		6	557.00
Domestic and institutional lighting to be converted to LED	Imphal	1	10.30	Chennai	1	5.76	Agra, Mangaluru	2	33.3		0		4	49.36
Solar battery operated boats	-						Varanasi	1	8.05		0		1	8.05
Solar Installations / Solar park / Solar electricity	Agartala, Warangal	2	191.15	Ahmedabad, Bhubaneswar, Pune, Surat, Udaipur, Vishakapatnam	6	506.50	Agra, Ajmer, Aurangabad, Huballi-Dharwad, Madurai	5	278.66	Srinagar, Pimpri-Chinchwad, Jammu	3	85.12	16	1061.43
Power distribution strengthening	Bhagalpur, Port Blair, Ranchi	3	223.01	Coimbatore, Indore, Jabalpur, Surat, Udaipur	5	204.37	Ajmer, Aurangabad	2	155.92	Muzaffarpur	1	65.1	11	648.40
24X7 Electrical/Power supply	Raipur, Warangal	2	809.70	Bhubaneswar	1	80.16	Amritsar, Gwalior, Shivamogga, Ujjain	4	484.09	Srinagar, Sagar, Satna, Jammu	4	1025.01	11	2398.96
Smart Meters system for power	Chandigarh, Lucknow, Newtown Kolkatta, Port Blair, Raipur	5	146.28	Belgavi, Bhubaneswar, Chennai, Indore, Jabalpur, Kochi, Vishakapatnam	7	309.19	Kanpur, Kohima, Nagpur, Namchi	4	99.88	Puducherry, Srinagar, Tiruppur, Jammu, Tirunelveli, Thoothukudi	6	140.31	22	695.66

Pan City														
Smart Metering for Electricity	-	0	0	Belgavi, Udaipur	2	123.5	Mangaluru, Thanjavur	2	81.65	Gangtok	1	12.00	5	217.15
Solar Rooftop Paneling	-	0	0	Belgavi	1	195.00	-	0					1	195.00
Wind Power Generation	-	0	0	Belgavi	1	186.00	-	0					1	186.00
LED Street Lighting / Intelligent Street Lighting	-	0	0	Belgavi, Bhopal, Coimbatore	3	536.21	Jalandhar, Kanpur, Mangaluru, Thanjavur, Tumkuru, Varanasi	6	581.24	Patna, Muzaffarpur, Pimpri-Chinchwad, Jammu, Gangtok	6	417.70	15	1535.15
City Gas Distribution	-	0	0	Belgavi	1	150.00	Amritsar, Jalandhar	2	609.23				3	759.23
Smart Energy / Smart Energy Management	-	0	0	Jaipur, NDMC	2	1158.00	Kanpur, Rourkela	2	112.00	Dahod	1.00	10.00	5	1280.00
Total														11288.16

ABD															
Smart Water Management	New Town Kolkata, Panaji, Ranchi	3	172.68	Surat	1	17.00	-	0		Jhansi	1	24.16	5	213.84	
Water ATMs	Raipur	1	5.25		0		Tirupati,Vadodara, Varanasi, Gwalior	4	5.76	Puducherry,Gandhinagar	2	11.58	7	22.59	
Smart Sewage management / Sewage treatment plant / Waste water management / Waste recycle / Solid waste management	Chandigarh, Dharamshala, Faridabad, Raipur, Ranchi, Warangal	6	109.24	Bhubaneshwar, Ludhiana, Ahmedabad,Belgavi, Chennai, Coimbatore, Davangere, Indore, Jabalpur, Kakinada, NDMC, Pune, Solapur, Surat, Visakhapatnam	15	1197.91	Namchi, Ajmer, Amritsar, Aurangabad, Gwalior,Huballi-Dharwad, Kanpur,Kohima,Kota, Madurai, Salem, Shivamogga, Thane, Tumakuru, Ujjain, Vadodara, Varanasi, Vellore	18	974.13	Patna,Karimnagar,Muzaffarpur,Puducherry,Gandhinagar, Srinagar,Karnal,Tiruppur,PimpriChinchwad,Pasighat,Jammu,Tirunelveli,Thoothukudi,Tiruchirapalli,Jhansi,Allahabad ,Gangtok	17	1257.76	56	3539.04	
24x7 water supply, water supply	Bhagalpur, Chandigarh, Faridabad, Raipur, Warangal, Port Blair	6	142.51	Bhopal, Bhubaneshwar, Chennai, Coimbatore, Kakinada, Ludhiana, Pune, Surat, Solapur, Udaipur, Visakhapatnam	11	847.01	Agra, Gwalior, Huballi-Dharwad, Amritsar, Aurangabad, Kota, Mangaluru, Nagpur, Salem, Shivamogga, Tumakuru, Ujjain, Vadodara, Nashik, Vellore	15	1026.12	Thiruvanthapuram,Patna,Karimnagar,Muzaffarpur,Gandhinagar,Srinagar,Sagar,Karnal,Satna,Tiruppur,Tirunelveli,Tiruchirapalli,Jhansi,Allahabad	14	993.2	46	3008.84	
Water Quailty Monitoring Sensors	Faridabad	1	1.00	Jabalpur, Jaipur, Kakinada	3	8.00	Gwalior, Kohima,Vellore	3	5.05		0		7	14.05	
Smart Meters system for water /SCADA System	Chandigarh, Dharmashala, Faridabad, Lucknow, Newtown Kolkata, Raipur	6	122.18	Ahmedabad,Belgavi,Bhubaneshwar,Chennai,Indore,Jabalpur,Jaipur,Kochi,Ludhiana,Pune,Surat	11	207.81	Agra, Kanpur, Kohima,Rourkela, Tirupati, Thanjavur, Shivamogga, Vadodara, Varanasi, Vellore	10	274.56	Puducherry,Srinagar,Tiruppur,Jammu,Tirunelveli,Thoothukudi	6	245.65	33	850.20	
Drinking water fountain										Thiruvanthapuram	1	7.32	1	7.32	

Pan City														
 Smart Metering supply / Water management / 24x7 supply	Raipur	1	8.00	Belgavi, Kochi, Pune,Solapur, Udaipur	5	1429.00	Kalyan,Kohima,Kota,Mangaluru,Nashik,Namchi, Salem,Tumakuru	8	775.6	Thiruvanthapuram,Karimnagar,Gandhinagar,Pimpri - Chinchwad,Pasighat,Dahod,Jhansi,Gangtok	648.64	14	2861.24	
													10517.12	
Total														

ABD														
ITS / ITMS for traffic and bus management	Bhagalpur, Chandigarh, Lucknow, Raipur	4	58.89	Jaipur, Kochi, Ahmedabad, Jabalpur, Chennai	5	13.47	Amritsar, Gwalior, Nashik, Salem, Shivamogga	5	1010.33		0		14	1082.69
Intelligent Parking Systems / smart parking / Shared parking / Multilevel car parking / Open parking	Agartala, Chandigarh, Dharamshala, Imphal, Lucknow, New Town Kolkata, Panaji, Port Blair, Raipur, Ranchi, Warangal, Faridabad	12	1440.44	Pune, Jaipur, Surat, Ahmedabad, Visakhapatnam, Indore, NDMC, Belagavi, Chennai	9	1148.95	Agra, Gwalior, Kanpur, Ajmer, Kohima, Maduari, Namchi, Rourkela, Salem, Shivamogga, Thane, Thanjavur, Tirupati, Tumakuru, Varanasi, Vellore	16	1073.65	Thiruvanthapuram, Patna, Karimnagar, Gandhinagar, Srinagar, Karnal, Shimla, Tiruppur, Pimpri Chinchwad, Jammu, Thoothukudi, Gangtok	12	876.72	49	4539.76
e-rickshaws / Electric vehicles for last mile connectivity / Battery operated vehicles	Chandigarh, New Town Kolkata, Raipur	3	199.25	Bhubaneswar, Jabalpur, Pune, Indore, Kakinada, Chennai, Vishakhapatnam, NDMC	9	181.59	Agra, Madurai, Nagpur, Tirupati, Vadodra, Varanasi	6	40.58	Thiruvanthapuram, Patna, Gandhinagar, Srinagar	4	56.22	22	477.64
Public Bike Sharing (PBS) / Cycle sharing	Chandigarh, Dharamshala, Raipur	3	5.47	Bhubaneswar, Coimbatore, Jaipur, Kakinada, Kochi, Visakhapatnam, Ludhiana, Chennai	8	130.76	Agra, Kota, Thanjavur, Tirupati, Vadodara	5	14.13	Karimnagar, Srinagar, Karnal, Shimla, Allahabad	5	19.70	21	170.06
Travel Card for city travel / Mobility card	Raipur	1	0.61		0		Gwalior	1	10.00		0		2	10.61
e-Buses	Chandigarh, Dharmshala	2	224.09	Pune	1	125.00	Maduarai, Nagpur, Varanasi	3	52.00	Patna	1	10.00	7	411.09
Electric cycles	-	0		Kakinada	1	0.77		0			0		1	0.77
Integrated GIS based utilities management		0		Chennai	1	8.89	Kohima, Vellore	2	12.05		0		3	20.94

Pan City															
Smart Traffic Signals / Solar powered traffic signal / Signages	Agartala, Dharamshala	2	13.12	Bhubaneshwar, Udaipur	2	107.57	Agra, Rourkela, Salem,Thanjavur Tumakuru	5	39.27	Karimnagar,Karnal,Pasighat		244.31	9	404.27	
Installation of CCTV / City Surveillance	Agartala, Dharamshala, Chandigarh	3	24.76	Coimbatore, Chennai	2	141.98	Agra, Aurangabad, Kalyan-Dombivali, Mangaluru, Nashik,Rourkela, Salem, Thane, Thanjavur, Tirupati, Tumakuru, Vellore, Kanpur, Varanasi	14	555.22	Thiruvanthapuram,Puducherry,Gandhinagar,Karnal,Tiruppur,Pimpri-Chinchwad,Jammu,Thoothukudi		119.59	19	841.55	
Bus Terminals / Smart Bus stop/Shelters/ Passenger Information System	Agartala, Dharamshala, Faridabad,Newtown Kolkata	4	64.24	Belgavi, Bhubaneshwar, Guwati, Udaipur, Indore, Pune	6	791.15	Agra, Jalandhar, Kohima, Mangaluru, Vellore	5	86.79	Srinagar,Karnal,Tiruppur,Thoothukudi		56.64	15	998.82	
Installation of GPS in Auto Richshaw, buses	Agartala, Dharamshala,Newtown Kolkata, Panaji	4	24.17	Indore, Jabalpur, Ludhiana, Udaipur	4	109.00	Kalyan-Dombivali, Rourkela, Thanjavur, Vellore	4	55.89				12	189.06	
Electronic Ticketing Machine	Agartala	1	1.61	Bhubaneshwar, Jaipur	2	22.68	Salem, Tumkuru, Vellore	3	32.2				6	56.49	
Bus Stand cum Depot Infrastructure / Intelligent Traffic Management System / Multi Modal Transit system	Agartala, Bhagalpur, Newtown Kolkata, Raipur, Ranchi, Warangal	6	283.24	Ahmedabad, Chennai, Belgavi,Indore, Pune, Surat	6	1119.00	Agra, Ajmer, Kalyan-Dombivali, Kanpur,Kota, Nashik, Rourkela, Shivamogga,Thane, Tirupati, Tumkuru, Ujjain, Varanasi	13	1002.97	Thiruvanthapuram,Patna,Karimnagar,Muzaffarpur,Puducherry,Gandhinagar,Srinagar,Sagar,Satna,Tiruppur,Pimpri-Chinchwad,Jammu,Tirunelveli, Thoothukudi,Jhansi,Allahabad		1072.16	25	3477.37	
Car parking system / Smart Parking / Multilevel parking	Faridabad, Panaji, Raipur, Ranchi, Warangal	5	79.865	Bhubaneshwar, Chennai, Indore, Pune, Udaipur	5	96.68	Agra, Gwalior, Kalyan-Dombivali, Nashik, Salem, Tumkuru, Varanasi	7	837.7	Puducherry,Gandhinagar,Karnal,Tiruppur,Pimpri-Chinchwad,Thoothukudi		78.31	17	1092.56	
E-vehicle module / Collection vehicles	Faridabad	1	48.98	Jabalpur	1	11.26	Mangaluru	1	5.76				3	66.00	
Electric Bus / GPS based buses	Newtown Kolkata	1	19.25	-	0	0	Jalandhar, Kalyan-Dombivali, Vellore	3	107.05	Srinagar,Jammu		280.50	4	406.80	
Public Bike Share System / Cycle sharing	Panaji	1	8.48	Chennai	1	15	-	0	0	Puducherry,Karnal,Pimpri-Chinchwad		19.25	2	42.73	
Battery operated Autorickshaws	-	0	0	Belgavi, Jaipur, Ludhiana	3	60.8	Rourkela, Varanasi	2	1.00	Allahabad		0.90	5	62.70	
Strengthening public transport	-	0	0	-	0	0	Agra	1	24.00	Patna,Pasighat,Tiruchirapalli		143.71	1	167.71	
Dedicated Cycle Routes/Track	Imphal	1	41.3	Belgavi	1	68.00	-	0		Jammu		4.50	2	113.80	
Pedestrian Pavements / Road Junction	Imphal	1	72.7	Belgavi	1	75.50	-	0		Karnal,Tiruppur		13.01	2	161.21	
Intelligent Urban Mobility System & Secure Environment	-	0	0	Davanagere	1	459.35	-	0	0				1	459.35	
Intelligent fleet management system for public entity owned system	-	0	0	Jaipur	1	15.00	-	0	0	Bengaluru		5.00	1	20.00	
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Total															15273.98

ABD														
Community Toilets / Public e- toilets / Smart Toilet/Upgradation of toilet	Lucknow, Dharamshala, Chandigarh, Raipur, Faridabad	5	34.84	Belgavi,Chennai,Coimbatore,Indore,Jabalpur,Kakinada,Kochi,Ludhiana,NDMC,Visakhapatnam	10	27.44	Agra,Gwalior,Hubballi-Dharwad,Kanpur,Kohima,amchi,Nashik,Shivamogga,Tirupati,Tumkuru,Vadodra, Varanasi, Vellore	13	95.83	Thiruvanthapuram,Patna,Karimnagar,Puducherry,Gandhinagar,Srinagar,Karnal,PimpriChinchwad,Jammu,Gangtok	10	42.67	38	200.78
Smart design of dustbins / Sensor based bins / Community Bins	Lucknow, Dharamshala	2	17.79	Chennai, Davangere, Indore, Kakinada, Kochi, NDMC, Ludhiana	7	42.05	Agra, Kalyan-Dombivali, Kohima,Nagpur, Namchi, Thanjavur, Tirupati, Varanasi	9	10.17	Srinagar,Jammu	2	4.32	20	74.33
Waste-to-Energy (Bio Methanation)	Dharmashala,Warangal	2	8.77	NDMC	1	8.60	Kalyan-Dombivali, Kohima, Varanasi	3	191.2	Puducherry,Tiruppur,Dahanu, Thoothukudi	4	77.51	10	286.08
GPS enabled vehicles for waste collection	Panaji, Lucknow	2	4.23	Kochi	1	6.00	Kohima, Tirupati	2	1.44	Srinagar,Jammu	2	2.00	7	13.67
Intelligent Solid Waste Management, Smart Waste Management, Integrated SWM	Chandigarh, Ranchi	2	25.02	Bhubaneshwar	1	14.50	Amritsar	1	442.5	Thiruvanthapuram,Karimnagar,Muzaffarpur,Puducherry,Gandhinagar, Karnal,Satna,Tiruppur,Pasighat,Tirunelveli,Thoothukudi,Tiruchirapalli,Jhansi	13	192.26	17	674.28

Pan City														
Smart Solid waste Mangement System	Imphal	1	10.2	NDMC, Jaipur, Kakinada	3	213.34	Amritsar, Aurangabad, Huballi-Dharwad, Kalyan, Kanpur, Kota,Nagpur, Ujjain, Vellore	9	603.31	Thiruvanthapuram,Srinagar,Jammu		214.12	13	1040.97
Trolley Bins with RFID tags / Dustbin cost for households	Panaji	1	0.625	Jabalpur	1	49.07	Agra, Mangaluru,Vellore	3	49.6	Gandhinagar,Gangtok		15.00	5	114.30
Sewerage management	-	0	0	-	0	0	Kalyan-Dombivali, Kohima, Rourkela	3	455.91	Pimpri-Chinchwad		3.00	3	458.91
Total														5952.6

ABD														
CCTV for Surveillance / Crime monitoring	Lucknow, New Town Kolkata, Panaji, Raipur	4	25.95	Jaipur, Indore, Kakinada, Jabalpur, Solapur	5	25.33	Agra, Auranabad, Gwalior, Kohima, Nagpur, Namchi, Shivamogga, Thanjavur	8	35.26	Tiruppur, Thoothukudi, Gangtok	3	203.17	20	289.71
Smart Kiosk	New Town Kolkata, Dharamshala, Agartala, Raipur, Port Blair	5	9.93	Belgavi, Jaipur	2	10.00	Agra, Nagpur, Namchi, Tirupati, Tumakuru, Varanasi, Vellore	7	24.94	Thiruvanthapuram, Tiruppur, Jammu, Thoothukudi, Gangtok	5	12.47	19	57.34
Citizen App (grievance redressal, citizen reporting) / Tourist App / Heritage App/Tourist Information centre	Port Blair	1	2.00	Jaipur	1	0.50	Ajmer, Nagpur	2	2.00	Karimnagar, Tirunelveli	2	10.20	6	14.70
GIS based property and land management system				Chennai, Jabalpur	2	10.89	Gwalior, Kohima, Vellore	3	12.05	Puducherry	1	26.25	6	49.19
Air Quality Monitoring App / AQM	Newtown Kolkata	1	9.60	Indore, Jabalpur, Jaipur	3	1.05	Gwalior, Mangaluru, Rourkela,	3	4.05		0		7	14.70
Women digital literacy centres	Raipur	1	0.46	Bhubaneswar	1	1.50	Agra, Gwalior	2	4.00	Karnal	1	7.47	5	13.43
Provision of Social Infrastructure	Ranchi, Warangal, Imphal	3	43.50	Coimbatore, Udaipur	2	206.50	Jalandhar, Kalyan-Dombivali, Kota, Madurai	4	214.80	Satna, Jhansi	2	216.57	11	681.37
Implement E-patashala / digital learning in 24 schools / e-smart schools	Bhagalpur, Raipur, Dharamshala, New Town Kolkata	4	26.80	Kakinada	1	4.50	Mangaluru	1	1.5	Tiruppur	1	6.36	7	39.16
Smart bus shelters and with e-toilets	Dharmashala	1	22.84	Belgavi, Coimbatore, Kakinada, Kochi, Ludhiana	5	17.10	Magaluru, Nagpur	2	11.27	Gandhinagar, Shimla, Tirunelveli, Tiruchirapalli	4	128.78	12	179.99
Mobile Health care centre, health facility & Super specialty Hospital	Bhagalpur, Imphal, New Town Kolkata, Raipur, Ranchi	5	44.75	Coimbatore, Indore, Jabalpur, Kakinada, Kochi, Bhubaneswar	6	95.10	Ajmer, Aurangabad, Gwalior, Kohima, Mangaluru, Thanjavur, Tirupati, Tumakuru, Ujjain, Vadodara	10	567.00	Thiruvanthapuram, Patna, Karimnagar, Srinagar, Sagar, Bengaluru, Shimla, Dehradun, PimpriChinchwad, Tirunelveli, Jhansi, Allahabad	12	387.24	33	1094.09
Smart Education / Education & Child Development	New Town Kolkata	1	0.60	Coimbatore, Indore, Jabalpur, Kakinada, Kochi	5	71.53	Ajmer	1	35.00	Patna, Puducherry, Sagar, Karnal, Tirunelveli, Jhansi	6	96.91	13	204.04
Computer Aided Dispatch (CAD) & AVL of Emergency and Police Vehicles - Hardware & Software	Chandigarh	1	4.84	-		0.00	Gwalior	1	3.00		0		2	7.84
Digital advertisement boards, Promotion and Advertising, Signages	Chandigarh, Faridabad, Raipur, Lucknow	4	38.96	Ludhiana, Chennai, Jaipur, Coimbatore, Kakinada	5	260.68	Agra, Gwalior, Kanpur, Kohima, Rourkela, Salem, Thanjavur, Tirupati, Varanasi, Vellore	10	142.88	Thiruvanthapuram, Srinagar, Jammu	3	30.69	22	473.21
Class Rooms	New Town Kolkata, Dharmashala	2	6.37	Indore, Jabalpur, Kakinada	3	15.78	Gwalior, Madurai, Rourkela, Thanjavur	4	36.63	Srinagar, Thoothukudi	2	5.53	11	64.31

Pan City													
Utility Management	Agartala	1	29.27	-	0	0	Varanasi	1	0.75			2	30.02
Alert and Notification system	Dharmashala	1	9.89	Bhubaneswar	1	51.52	-	0	0			2	61.41
Citizen e-kiosks/ Touch screen kiosks	Dharamshala, Newtown Kolkata	2	7.57	Belgavi, Ludhiana	2	45.3	Kohima, Rourkela, Varanasi, Vellore	4	22.26	Karimnagar, Puducherry, Gandhinagar, Karnal, Pimpri-Chinchwad	22.59	8	97.72
Smart Card for Citizens	Dharamshala, Newtown Kolkata, Raipur	3	50.77	Ahmedabad, Bhubaneswar, Indore Kochi, Surat	5	215.68	Agra, Kanpur, Kohima, Thane, Varanasi	5	73.69	Srinagar, Jammu	10.00	13	350.14
Air Quality monitoring stations / Air Pollution Monitoring / Air Quality sensors	Panaji, Raipur	2	4.45	-		0	Kanpur, Thanjavur	2	15.20	Karimnagar, Gandhinagar, Srinagar, Dehradun	241.90	4	261.55
Biometric attendance	Panaji	1	0.31	-		0	-	0				1	0.31
GIS based Property survey / ICT enabled E- Governance System on GIS / E-Governance	Raipur	1	10.00	Davanagere, Indore, Ludhiana, Udaipur	4	90.44	Ajmer, Amritsar, Gwalior, Vadodara	4	166.50	Puducherry, Pasighat, Jammu, Tirunelveli, Tiruchirapalli	178.71	9	445.65
Smart Education	-	0	0	NDMC	1	45.00	-	0	0	Tiruchirapalli, Allahabad	6.6	1	51.60
Centralised Hospitalization facilitation / Telemedicine/e-health centres	-	0	0	NDMC	1	21.75	Rourkela	1	1.50	Karimnagar, Puducherry, Dehradun, Dahod, Tirunelveli, Allahabad	100.50	2	123.75
People Empowerment Platform	-	0	0	-	0	0	Huballi-Dharwad	1	84.00			1	84.00
Fire Station & Automated Fire Response System	-	0	0	-	0	0	Kohima	1	10.00	Jammu	20.00	1	30.00
Emergency Response System	-	0	0	-	0	0	Kohima, Salem, Tumkuru	3	21.00	Gandhinagar, Srinagar, Karnal, Jammu	36.15	3	57.15
Safety & Security Management	-	0	0	-	0	0	Ujjain	1	99.87	Sagar, Satna, Bengaluru, Tiruppur, Thoothukudi, Tiruchirapalli	256.24	1	356.11
Disaster Management	-	0	0	-	0	0	-	0	0	Thiruvanthapuram, Tiruppur	12.48	0	12.48
E-learning in Schools & Smart Classrooms/Learning & Skill Management	-	0	0	-	0	0	-	0	0	Karimnagar, Gandhinagar, Satna, Pimpri-Chinchwad, Dahod	64.06	0	64.06
Smart Tourism	-	0	0	-	0	0	-	0	0	Puducherry	1.05	0	1.05
Total													5210.08

City Management Center, Command Center,
Integrated Operations Center, Smart Unified
Governance

PC	34	2852.13
ABD	11	455.94
Total	45	3308.08

City Portal, One City platform, Dashboard,
MyCity

PC	11	331.48
Total	45	3639.56

A technological view

Information

Control

Transaction

At Minimum

Common Services & API's

Data Models & Ontologies

7.9.1 Annexure 4 - Bill of Quantity

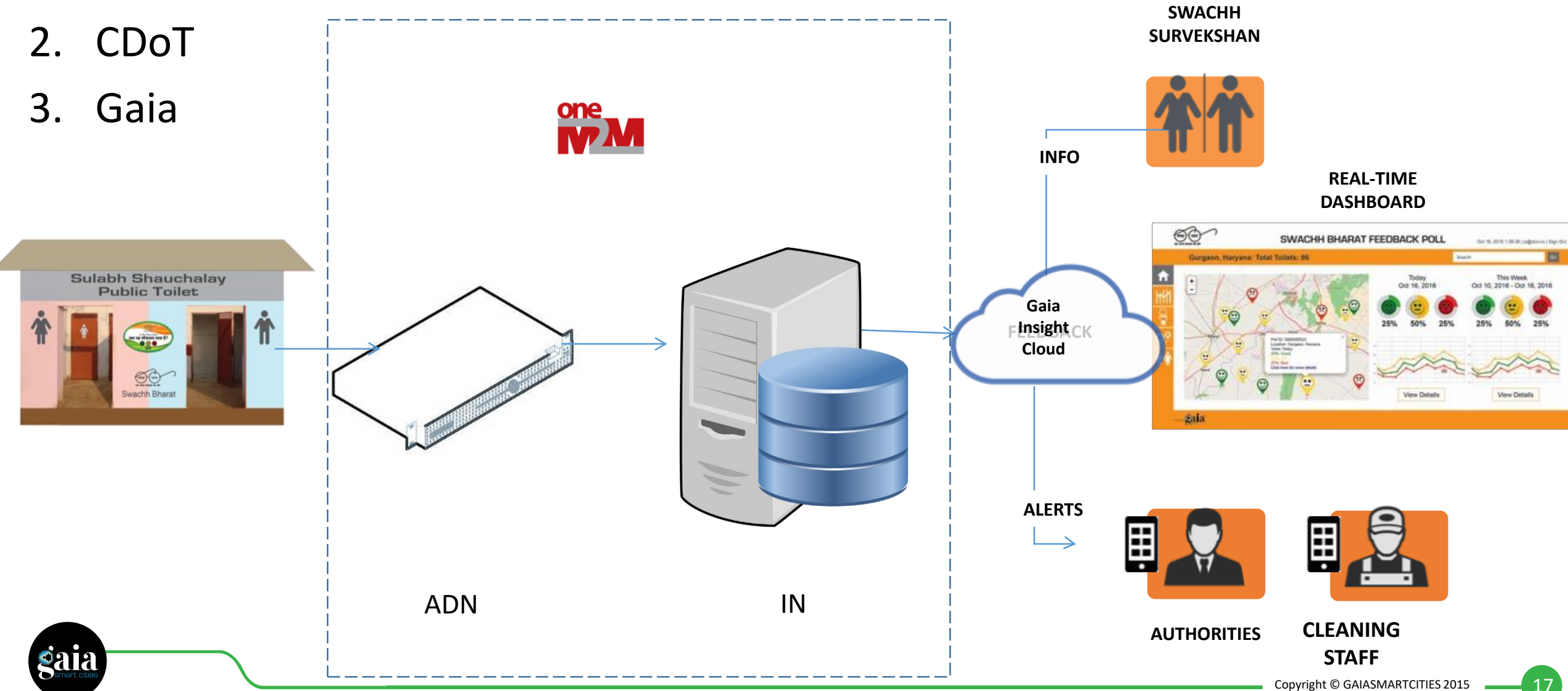
No	BoM Line Item	Qty	Full Compliance with RFP (Y/N)
A. Command Control Center			
A.1	Video Wall (along with hardware & software) Solution - 4x2 Display	1	
A.2	Projector for Meeting Room	1	
A.3	Fire & Smoke Detectors	2	
A.4	Colour Printers	1	
A.5	Core Router	2	
A.6	Internet Router	2	
A.7	Core Switch	2	
A.8	Internal and External Firewall and IPS/IDS	2	
A.9	wan accelerators	-	
A.10	2 Screen –Operators Client Workstations for Command Control Center	1 0	
A.11	L2 Switch - 24 port	2	
A.12	UPS Online min 40 KVA with Batery Back up of	2	
A.13	Air Conditioning - 10 Ton - A/C	2	
A.14	CCTV camera	5	
A.15	Biometric access control system	1	
A.16	Operating System Licence	1 0	
A.17	Public IP	-	
A.18	Networking & cabling	1	
A.19	SAN Switch	-	
A.20	Storage - 100 TB (usable)	-	
A.21	Gen Set - 100 KVA	1	
A.22	Video IP phones	1 0	
A.23	Civil	-	
A.24	IBMS Solution	1	

B. Data Center

B.1	Server Racks - 42 U, with complete electrical connections	2
B.2	Core Router	2
B.3	Internet Router	2
B.4	Firewall and IPS/IDS	2
B.5	Core Switch (L3)	2
B.6	L2 Switch -24 Port	2
B.7	San Switch	2
B.8	Storage - 100 TB (usable)	1
B.9	Anti virus Suite / Gateway	1
B.10	Back up s/w	1
B.11	LTO (Back Up Drives)	1
B.12	Blade chassis	2
B.13	Blade Server	10
B.14	Virtualization Software (VM ware)	10
B.15	Cluster Suite	1
B.16	Multi-tenancy City Operations Platform - IoT Platform/Data Normalization software & City Operation Centre Software	1
B.17	City Tenant activation license with one lakh device connection	1
B.18	Integration of various for sensors, applications/systems	1
B.19	Operator Client License	25
B.20	Data Center Site Preparation	LS
B.21	SLA, Helpdeck& EMS Solution	1
B.22	IBMS Solution	1

Our OneM2M implementation

1. ST Microelectronics
2. CDoT
3. Gaia



Need for a System to be mandated

1. As a standards driven entity
2. Other systems can comply

Is OneM2M the Answer

Ease of Integration Simplicity & Cost

1. Cannot have rigid structures
2. Cannot have compliance complication
3. Solution costs are extremely low

Is OneM2M the Answer

Diversity & Adaptability

1. Wide spectrum of
 1. devices,
 2. processes,
 3. systems,
 4. requirements
2. Calls for a variety of domain specific architectures

Is OneM2M the Answer

Operation Friendly

1. SI's have to integrate and operate systems
2. Administrators have to manage and operate systems

Is OneM2M the Answer

1

Can the Internet of Things pave the way for a revolution in Governance?

2

Can shared data really democratise democracies?

Tesseract



We need to Tesser 1

- Straight lines wont work.
- Need To find **easier quicker better** ways to achieve Smart Cities

The tech world and the real world Will the twain meet? 3

- The degree of simplicity will have significant impact
- Show value to different segments

Innovate on Business Models 4

- Costs of solutions do not warrant many 'in-betweens'
- Can systems be offered using innovative business models?

Common Services, data models, methods are required 2

- Talk their language
- Enable administrative ease
- Enable operational ease

Collaborate, Streamline, Achieve More 5

- Collaborate and distribute responsibilities between various institutions.
- Improve delivery. Avoid duplication

Comments/Suggestions?
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