

TAMIL NADU

## **Live Recording of Poll Proceedings and Video Streaming to a Central Server**

In Election Commissioner's letter No. 447/2007-PLN-IV, dated: 17.01.2007 [Instruction Sl.No.52, in Compendium of Instructions 2009], consolidated instructions were issued on the subject of use of Videography and digital cameras during elections. The Commission directed that in order to enable the Commission to have a true, faithful and concurrent record of the violations of the election law and the standing instructions of the Commission and to assess the impact of its corrective measures, the Returning Officer of each constituency shall make arrangements to record through videography, critical events during the process of electioneering, including but not restricted to the period of public campaign, the day of poll, the transport and receipt of polled ballot boxes and other materials, counting of votes and the declaration of results in an independent intelligent and purposeful manner.

2. In letter No. 464/INST/2005-PLN-I, dated: 15.10.2005 addressed to the Chief Electoral Officer, Bihar, the Election Commission directed that in compliance with the orders of the Supreme Court in Civil Appeal No. 9228 of 2003 – (Janak Singh Vs. Das Rai and Other) dated: January 11, 2005, photography may be carried inside the polling stations to photograph electors and cover poll proceedings without compromising the secrecy of voting. This will be in addition to videography of critical events during the election process and videography at hyper-sensitive polling stations on the day of poll (which was already covered by the earlier instructions of the Commission).

3. In the consolidated instructions issued by the Election Commission in letter No.447/2007-PLN-IV dated 17.01.2007 on the use of videography and digital cameras during elections, in para 13 of this letter, the Election Commission reiterated the instructions contained in the letter of 2005 in regard to photography being carried inside polling stations to

photograph electors and cover poll proceedings without compromising the secrecy of voters. The photograph of electors should be taken immediately after an entry has been made in the Register of Voters in Form 17 A.

4. In a bye-election all the polling stations become sensitive in as much as there is a concentration by the members of political parties/ political functionaries on the constituency/ constituencies for which the bye-election is conducted. The following measures were generally put in place in the polling stations:

- a. CPFs, if made available, or the SAP from other States, to safeguard the polling station
- b. Positioning of Digital Camera or video camera - the procedure for deploying such cameras was given vide letter No. 447/ 2007/PLN-IV dated 17.01.2007.
- c. Deployment of Micro-Observer inside the polling station.

5. **Live Recording** – During the Lok Sabha elections 2009 from Tamil Nadu a start was made with Live-Recording and Video streaming to the DEO's office being done in some polling stations in Chennai, Madurai, Kanniyakumari and Sivaganga districts. The Bye-Elections to 5 Assembly Constituencies of 78.Bargur, 103. Thondamuthur, 134. Cumbum, 197.Ilayangudi and 226. Srivaikuntam witnessed considerable upscaling of this process when live recording was done on 18<sup>th</sup> August 2009 during the poll in all the Polling Stations in these constituencies using PCs and Web Cam or Laptops with built-in web cam and computer teachers and students were drafted to serve as operators. Video-streaming to the CEO's office Server was possible wherever BSNL connectivity was available. The BSNL, Chennai provided broadband connectivity against a flat charge of Rs.700/- per connection exclusive of service tax. The District Election Officers were permitted to incur an expenditure of Rs.750

per Computer Operator deployed for the poll duty and Rs.600 for the officers of NIC/ M/s. ELCOT/M/s. CMC Limited who provided technical support and were a part of the Zonal Party. [The cost worked out to nearly half the cost of the conventional videography adopted in monitoring the Polling Stations]. Subsequently, in the bye-elections to Tiruchendur and Vandavasi ACs (poll on 19<sup>th</sup> December, 2009), live-recording was done in all the PSs and Video-streaming done (first to CEO's Server) and from there to DEO's office wherever BSNL connectivity was available (100% in Tiruchendur AC and 25% in Vandavasi AC). The software was provided by an Agency free of charge for both live-recording and video-streaming.

6. In the Polling Stations where broadband connectivity was not feasible for live transmission, the proceedings were recorded in the hard disk of the laptops in the polling stations. This was copied in a DVD and handed over to the reception centre for viewing by the Observer/DEO / RO.

7. In the 5 bye-elections, certain problems were encountered which were taken care of in the subsequent two bye-elections:

- i) Systems did not have a good anti-virus software (or had on old version), resulting in non-transmission of the video. It should be ensured that all systems are virus, malware/spyware free.
- ii) In many systems, the transmission was blocked by either a firewall or McAfee anti virus engine. The system settings should be changed accordingly.
- iii) In many locations, the Modem power had been turned off and there was no internet connection.
- iv) The driver for the web cam had not been installed properly
- v) System OS requirements were not properly communicated. Wherever Windows Vista was the OS, user permission settings had to be suitably changed.

8. In the two bye-elections for which the poll was held on 19<sup>th</sup> December, 2009, an innovative feature was that apart from live-recording of the poll proceedings through a web-cam positioned in each PS, another web cam was put to focus on the elector and capture his image for transmission to the CEO's office Server for comparison with the image in the pre-loaded photo rolls database. In the laptop dedicated for a PS, the photo rolls database of the relevant Part relating to that PS was loaded in the Laptop. This enabled the Operator and the Presiding Officer also to view the photo of the elector by entering the serial number of the elector. [Web-cams were procured for all the Polling Stations (at 2 per polling station) for the above purpose].

9. The systems to be installed in the polling stations should have the following specifications:

- Windows XP Service Pack 2 or Higher (Virus Free)
- Flash Player v.10
- 5 Mega Pixel Web Camera
- 100 Mbps Network Card
- 512 MB RAM (or) 1 GB RAM
- Pentium 2.3 Ghz & above (or) Equipment
- USB Version 2.0 (Dedicated For Web Camera)
- Internet Connection Minimum 256 Kbps.  
(Video Transmission Requires At least 116 Kpbs Upload Speed)
- 40GB or higher hard disk space
- DVD writer

The systems in DEO's/ RO's office used to monitor the Polling Stations should have the following specifications: (DEOs had access from the CEO's office Server).

- Windows XP Service Pack 2 or Higher (Virus Free)
- Flash Player v.10
- 100 Mbps Network Card
- 512 MB RAM (or) 1 GB RAM

- Pentium 2.3 Ghz & above (or) Equipment
- Internet Connection Minimum 256 Mbps BroadBand (Leased Line for viewing)

10. The DEOs had to check on the availability and organize (i) laptops (ii) broadband connectivity [after discussion with the BSNL officers having jurisdiction] – (iii) Computer Science Teachers / Operators / Students with IT / Electronics Engineering / MCA or BCA background for operating the computer on poll day.

11. In the CEO's office Control Room, 1 Plasma Screen per Constituency was hired for viewing the live-recording and for checking the image of the voter captured in the polling station with the image in the photo rolls placed along side by a software devised for the purpose. [It would be preferable to have a separate Plasma Screen for each of the two processes.] A 40 MBPS (20MBPS per AC) band-width line was leased from BSNL for one week to provide the requisite connectivity in the CEO's office. Four Servers were also hired for processing the live feed of video and photos. The Servers were of the following configuration :

- Dual Core Xcon 3 Ghz
- 4 GB RAM
- 120 GB HDD
- 2 Ethernet cards

## **SMS Based Poll Management System**

In the 5 Bye-elections to TNLA (78.Bargur, 103.Thondamuthur, 134.Cumbum, 197.Ilayangudi and 226.Srivaikuntam) after the Lok Sabha elections, 2009 for which the poll was conducted on 18<sup>th</sup> August, 2009 and subsequently in the 2 bye-elections [for the ACs of 51.Vandavasi (SC) and 225.Tiruchendur] for which the poll was conducted on 19<sup>th</sup> December, 2009, a SMS based poll Management System for getting updates on the various milestones on pre-poll day and poll day was put in place as was done in Tripura (in the Lok Sabha elections, 2009).

The most important feature of the above system in this was that information at hourly intervals till 3.00 p.m. and at ½ hourly intervals after 3.00 p.m. of the votes polled in the polling stations was furnished by the BLO (1 BLO to be dedicated for each polling station) as a formatted SMS message from his mobile phone to the Central Server in the CEO's office. Towards this end, the BLOs were provided SIM cards with a number from a series of numbers allotted by BSNL for BLOs, Zonal Officers, R.O., DEO's office including Special Tahsildar (Elections) and CEO's office. The following arrangements are required to be made for the operation of the above SMS based system:

- Each BLO should be equipped with a cell phone (GSM cell)
- Messages would be sent by the BLOs to a particular 5 digit number (54367 in the above bye-elections in Tamil Nadu)
- These messages are formatted messages and will be directly pooled in the Central Server located in the CEO's office.
- A team of 4 to 5 persons (Programmers / Assistant Programmers) should be dedicated in the CEO's office to moderate the messages

- These Moderators should manually moderate incomplete or wrong messages
- SMPP Port (Short Message Peer to Peer Port) would be the interface between the Mobile phone and the Server.
- For implementation of the SMS based Poll Monitoring System, a licensed software, viz., Active Experts SMS Messaging Server was obtained and used in the two bye-elections. Earlier, for the 5 bye-elections, the trial version was used (cost Rs.78, 000 only).
- There should be network coverage in the polling stations. In shadow areas, other arrangements for communication have to be made (like furnishing information through a runner / landline phone / mobile phone from the nearest place having network coverage.
- Orders with BSNL for SIM cards have to be placed with BSNL after ascertaining the network coverage at the polling stations locations and determining the number of officials to be provided SIM cards.
- BSNL should dedicate a number of SIM cards with running numbers in a series for all the concerned officials [like BLOs, Zonal Officers, etc./ DEO, RO, Special Tahsildar (Elections), CEO's office].
- BSNL offered free SMPP Port and the CEO's office had to pay only for SIM cards
- The threshold limit for mobile phone could be Rs.300 per mobile (rental Rs.199, SMS and call charges Rs.101). Each SMS to the Code Number will cost Rs.2.



- The BLOs and other officials should not make unnecessary calls prior to poll day lest they exhaust the amount.
- Each BLO may be given a small card (wallet size which can be carried in the shirt / pant pocket) with the standard formatted messages for his reference on pre-poll and poll day. A specimen is enclosed.
- A separate training session has to be organized for the BLOs by the RO (in small groups of 30 BLOs) on the messages to be given for different milestones on pre-poll and poll day. The BLOs have to be trained well in the use of the standard formatted message.
- The SIM card numbers are incorporated in the **Communication Plan** once the numbers have been allotted. The format for the Communication Plan may be seen from the sheet attached as a specimen.
- Each SIM should be pre-dedicated to a polling station. This data will be entered in the central server.
- BLOs have to send one initial message for validating the number after which all subsequent messages will automatically update the information for that polling station.
- The software can generate reports to indicate the poll percentage at specified intervals, the polling stations where mock poll has been completed, poll has commenced, closure of poll, departure of polling parties, etc.

## **Communication Plan**

The Election Commission of India in letter No. 464/INST/2009/EPS, Dated 28-03-2009 pointed out that during the General Elections to the State Assembly of Madhya Pradesh information and data were collected and actively utilized on the day of the poll, both by the Election Commission of India as well as in the State. The Communication Plan as evolved then had been validated into a national concept by the Election Commission of India, with an intention to speedily track information on the poll-day and to make the management of election information -centric. A well developed Communication Plan is expected to have even higher utility in situations of limited availability of security forces.

Timely information is strength that can ensure quick response to any exigency that may arise. This requires a mechanism to achieve the goal. The channel of communication to/from every PS – public or private telephone (landline or mobile) and contact person should be identified. This arrangement would be very helpful in solving any problem that may arise on poll day like mal-functioning of EVMs etc. and also to get/transmit information instantaneously on attempts at booth capturing, impersonation / bogus voting, intimidation, etc.

The Communication Plan was used effectively in the bye-elections in the State held in 2009. For example, when a call was received that booth-capturing had occurred in 3 booths (Polling Stations), the concerned Booth Level Officers (BLOs) were contacted directly and it was learnt that the poll was going on smoothly and that the information on phone was false. Wherever required, Zonal Officers were directed to personally inspect the Polling Station and report the prevailing situation.

# Formatted messages to be sent to 54367 for SMS based Poll Monitoring

		Message Format	Sample SMS	Description
1	PV	A###P###PV	A225P4PV	Phone Validation
2	MA	MA	MA	Polling Materials Arrival
3	PP	PP	PP	Polling Parties Reached
4	PA	##PA	10PA	No. of Polling Agents
5	MO	Y/N MO	YMO	Micro Observer
6	MC	MC	MC	Mock Poll Conducted
7	PS	PS	PS	Poll Started
8	PI	PI	PI	Poll Interrupted
9	PR	PR	PR	Poll Resumed
10	VC	####VC ①	606VC	Votes Cast
11	FC	####FC	1000FC	Final Vote Cast
12	PD	PD	PD	Poll Party Departed

① 11 SMS to be given at the time intervals indicated below :

09:00 AM	12:00 AM	03:00 PM	04:30 PM
10:00 AM	01:00 PM	03:30 PM	05:00 PM
11:00 AM	02:00 PM	04:00 PM	

## 225. Tiruchendur AC

Numbers to be contacted for emergency like booth capturing, EVM Malfunctioning, Law and order problem, etc.

CEO's Office : 94894 02470

94894 02471

94894 02472

94894 02473

94894 02474

DEO's Office : 94894 02459

94894 02460

DEO : 94894 02456

RO : 94894 02457

Tahsildar (Elections) : 94894 02458

Zonal Officer :

Sl. No.	Polling Station	Nearest Communication Node				Nearest Police Station or Outpost				Zonal Officer		Any other suitable contact person : runners, etc				Phone Number	
		Person's Name	STD Code + Phone No	Mobile No	Wireless (Y/N)	Name of village where situated	Distance from Polling Station	STD Code + Phone No	Mobile No	Zone No	Officer Name	STD Code + Phone / Mobile No	Name of person runner (1)	STD Code + Phone / Mobile No	Name of person runner (1)		STD Code + Phone / Mobile No
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
1	Panchayat Office Ponnayyehar Eastern Building	Rajaratnam Organizer ICDS Sethukkuvaithan		9489402243	N	Kurumbur	2KM	04639-235100	--	1	Thiru Jeyasingh Selvakumar Tahsildar (SSS), Taluk Office Thoothukudi	9489402439	R Chitravel	9942065399	Mrs.Deva vasanthi	9443979858	
2	Panchayat Office Ponnayyehar Western Building	Rejeshwari Organizer ICDS Sethukkuvaithan		9489402244	N	Kurumbur	2KM	04639-235100	--	1	Thiru Jeyasingh Selvakumar Tahsildar (SSS), Taluk Office Thoothukudi	9489402439	R Chitravel	9942065400	Sr Jackal Mary	9865133054	
3	Panchayat Office Ponnayyehar Eastern Building	M Jeyasankari Village Administrative Officer, Mala Authoor		9489402245	N	Authoor	2KM	04639-238411	--	1	Thiru Jeyasingh Selvakumar Tahsildar (SSS), Taluk Office Thoothukudi	9489402439	R Rathina Kumar	9486204852	Mrs JeyaLalitha	9994259538	
4	Panchayat Office Ponnayyehar Western Building	T Selvi Organizer ICDS Punaichathankurichi		9489402246	N	Authoor	2KM	04639-238411	--	1	Thiru Jeyasingh Selvakumar Tahsildar (SSS), Taluk Office Thoothukudi	9489402439	R Rathina Kumar	9486204853	Mrs JeyaLalitha	9994259538	
5	Panchayat Office Ponnayyehar Eastern Building	Feniyaprathi Organizer ICDS Punaichathankurichi		9489402247	N	Authoor	2KM	04639-238411	--	1	Thiru Jeyasingh Selvakumar Tahsildar (SSS), Taluk Office Thoothukudi	9489402439	R.Rathina Kumar	9486204854	Mr Thommai Antony	9487384764	
6	Panchayat Office Ponnayyehar Eastern Building	Raj Fernande Organizer ICDS South Authoor		9489402248	N	Authoor	2KM	04639-238411	--	1	Thiru Jeyasingh Selvakumar Tahsildar (SSS), Taluk Office Thoothukudi	9489402439	M.Muthuraj	-	Mr.Shunmugam Pillai	9442140739	
7	Panchayat Office Ponnayyehar Western Building	S Saraswathi Organizer ICDS Narasanvilai		9489402249	N	Authoor	2KM	04639-238411	--	1	Thiru Jeyasingh Selvakumar Tahsildar (SSS), Taluk Office Thoothukudi	9489402439	M.Muthuraj	-	Mr Shunmugam Pillai	9442140739	
8	Panchayat Office Ponnayyehar Eastern Building	A Monoharani Organizer ICDS Muslim street Authoor		9489402250	N	Authoor	2KM	04639-238411	--	1	Thiru Jeyasingh Selvakumar Tahsildar (SSS), Taluk Office Thoothukudi	9489402439	M RamaSubramanian	9688220170	Mr Xavier Jesuraj	9442758698	
9	Panchayat Office Ponnayyehar Eastern Building	S Elin Esakk Organizer ICDS Achariyur		9489402251	N	Authoor	2KM	04639-238411	--	1	Thiru Jeyasingh Selvakumar Tahsildar (SSS), Taluk Office Thoothukudi	9489402439	M RamaSubramanian	9688220171	Mr Xavier Jesuraj	9442758698	
10	Panchayat Office Ponnayyehar Eastern Building	S Muniammal Organizer ICDS Rajapathy		9489402252	N	Authoor	2KM	04639-238411	--	1	Thiru Jeyasingh Selvakumar Tahsildar (SSS), Taluk Office Thoothukudi	9489402439	M.RamaSubramanian	9688220172	Mr.Xavier Jesuraj	9442758698	
11	Panchayat Office Ponnayyehar Eastern Building	Rathika Organizer ICDS Keeranoor		9489402253	N	Authoor	2KM	04639-238411	--	1	Thiru Jeyasingh Selvakumar Tahsildar (SSS), Taluk Office Thoothukudi	9489402439	M.RamaSubramanian	9688220173	Mr.K.S.Murugan	9486637734	
12	Panchayat Office Ponnayyehar Eastern Building	S vembadiyachi Organizer ICDS Chockkappaiankari		9489402254	N	Authoor	2KM	04639-238411	--	2	Thiru P MihavelGnanatheepam Tahsildar (sss) Sattankulam	9489402440	S Gopalan	-	Mrs Gomathi	9443404809	
13	Panchayat Office Ponnayyehar Eastern Building	R Marnammal Organizer ICDS Thannarayana		9489402255	N	Authoor	2KM	04639-238411	--	2	Thiru P MihavelGnanatheepam Tahsildar (sss) Sattankulam	9489402440	S Gopalan	-	Mr Esakkimuthu	97511009763	
14	Panchayat Office Ponnayyehar Eastern Building	A Punnammal Organizer ICDS Vadukku Authoor		9489402256	N	Authoor	2KM	04639-238411	--	2	Thiru P MihavelGnanatheepam Tahsildar (sss) Sattankulam	9489402440	S.Gopalan	-	Mr Esakkimuthu	97511009763	
15	Panchayat Office Ponnayyehar Eastern Building	M Sankarasubbramanian Village Administrative Officer Serathamangalam		9489402257	N	Authoor	2KM	04639-238411	--	2	Thiru P MihavelGnanatheepam Tahsildar (sss) Sattankulam	9489402440	S Chinadurai	9943826759	W.Willigias Lobo	9843707357	
16	Panchayat Office Ponnayyehar Eastern Building	Marnammal Organizer ICDS Serathamangalam		9489402258	N	Authoor	2KM	04639-238411	--	2	Thiru P MihavelGnanatheepam Tahsildar (sss) Sattankulam	9489402440	S.Chinadurai	9943826760	W Willigias Lobo	9843707357	
17	Panchayat Office Ponnayyehar Eastern Building	A Dhanalakshmi Organizer ICDS Selanputhiavanoor		9489402259	N	Authoor	2KM	04639-238411	--	2	Thiru P MihavelGnanatheepam Tahsildar (sss) Sattankulam	9489402440	S Chinadurai	9943826761	Mrs Packiavathi	9442505214	
18	Panchayat Office Ponnayyehar Eastern Building	S Paul Pandian Village Administrative Officer Punnakkiya		9489402260	N	Authoor	2KM	04639-238411	--	2	Thiru P MihavelGnanatheepam Tahsildar (sss) Sattankulam	9489402440	P Subarah	9638120475	Mr Vijayakumar Loba	0436942539	

### Polling Station Communication Plan - Format

[illegible]

## **Geographical Information System (GIS) for Rationalization of Polling stations**

One of the major initiatives in use of IT in electoral administration was the computerisation of electoral rolls and also EPIC database. The next generation intervention was Geographical Information System (GIS) mapping of Polling Stations which would facilitate their re-organisation to ensure geographical contiguity etc.

2. The Election Commission of India in the context of exploring the use of GIS in updation of electoral rolls, location of Polling Stations, conduct of elections etc., indicated in May 2007 that GIS applications should be operationalized to improve the fidelity of the electoral rolls, for clear and disaggregated demarcation of polling station's catchment area, scientific location of Polling Stations and rationalized route planning etc. for conduct of polls.

3. A pilot project on GIS mapping of Polling Stations was taken up in one of the districts, viz., Tiruvallur District in Tamil Nadu by the School of Geosciences, Bharathidasan University [G.O.Ms.No.1048, dated 16.09.2008] following which orders were issued [in G.O.Ms.No.88, Public (Elections.II) Department dt. 22.01.2009] for taking up the project, "ELECGIS" [Electioneering through Geographic Information System] in the remaining 30 districts of Tamil Nadu by the same University. The scope of the work was *inter-alia* mapping of polling stations locations, Part boundaries, all important roads, rail lines, rivers, canals, major water bodies, important public buildings, (important geographical & physical features) etc., and linking with electoral rolls database.

4. The *raison d'être* for entrusting the project to the Bharathidasan University (School of Geosciences) was as follows :

The Bharathidasan University had already implemented GIS projects earlier. The University has the necessary infrastructure and in-house expertise to handle GIS projects. One such project was under the flagship programme of Government of India, viz., the Sarva Shiksha Abhiyan (SSA) (Education for All) and the work done by the University for that project "SCHOOLGIS" [which was essentially for mapping the location of the schools which incidentally serve as the polling stations also] could be utilized with advantage for the above GIS project. The availability of about 1,32,000 GPS co-ordinates including most locations of polling booths and sections of Tamil Nadu with Bharathidasan University established from project "SCHOOLGIS" was a great advantage. These resources did not need to be repeated in the field for the purpose of "ELEGIS". This saved major cost involved in the field work. The University, being a Government- body could be relied upon for support and help whenever any problem arises during implementation, and even for refinements later, since the work would be taken up by the University out of academic interest rather than for commercial interest. The University had also promised free hand-holding for one year for the successful implementation of the work.

5. The project was taken up in 4 phases to cover the entire State spanning over nearly a year – February to December 2009.

6. During the General Elections to Lok Sabha 2009 and the bye-elections held in the year in Tamil Nadu, one immediate use made of the GIS mapping of Polling Stations was route-optimization for transport of materials from storage point to the polling stations and then to counting centre.

7. A vital aspect in electoral administration which needs attention is the location of the polling stations. It may be mentioned that the Electoral Roll of an Assembly Constituency, according to the Registration of Electoral Rules, 1960, is divided into convenient Parts



with identifiable geographical boundary [like revenue village in rural areas or ward in municipal areas]. These Parts are further organized into geographically identifiable Sections [which may be hamlets in rural areas or streets in urban areas]. It is under these Sections that household-wise electors' details are entered which are arranged in 8 columns format in a 'text' roll and the photo of the electors is provided additionally in the case of a photo roll.

8. A number of representations are received from time to time that Parts/Sections have not been formed on the basis of geographical contiguity in some cases or / and polling stations located without reference to the geography of the area or the convenience of the electors with the result that in some cases, the electors of some area within a Part have got attached to a distant Polling Station and therefore have to traverse a long distance to exercise their franchise. In fact, there is a host of issues which have come to notice in the division of electoral rolls of an AC in Parts / Sections with identifiable geographical boundaries and the location of PSs.

9. With a view to addressing the above issues, a pilot project for rationalization of Parts / Sections and polling stations in an AC of one of the districts in Tamil Nadu (Manapparai AC of Tiruchirapalli district with a predominantly rural setting) -was taken up by the Centre for Geographic Information Technologies, School of Geosciences, Bharatidasan University, Tiruchirapalli. A pilot study in an AC with entirely urban setting, viz., Ambattur AC in Tiruvallur district was then taken up. Following the study in the first AC, the Bharatidasan University formulated a proposal for Project ELECGIS2 - Reorganisation of Parts / Sections and Rationalisation of PSs using GIS & GPS - [with their letter dt. 07.09.2009]. The project 'ELECGIS' [sanctioned earlier vide G.O.Ms.88 Dated: 22.01.2009] covering the entire state of Tamil Nadu formed the basis for conceptualising **Project "ELECGIS2"** for Reorganisation of Parts / Sections and

Rationalisation of Polling Stations using GIS and GPS. This would involve **Field Validation** including road validation, new section identification in the field, public enquiry, field search for Polling Station, public Interaction and GPS Capturing. The road network would also have to be verified by physically plotting the GPS coordinates. The study conducted in Manapparai had brought out the need for such rationalisation and quantified the benefits of the re-organisation. The results derived out of rationalisation were validated in the field thereby enabling field level implementation straightaway by the authorities. The relocation of Polling Stations indicated in the pilot study would reduce the travel distance to the tune of 37 per cent road distance by the public which is considerably more now. It would also facilitate decongestion of Polling Stations on election day enabling better law and order management. It would also bring almost all the Polling Stations within the distance norm (from the hamlet/habitation) laid down by the Election Commission. The hardships faced by the people in exercising their franchise would be greatly reduced.

10. In ELECGIS2, 2.20 lakh sections (not covered in the earlier Project) and 60,000 kms of road network would be additionally captured (making the total road length captured to 1,60,000 kms. up to WBM). The total cost of project was estimated at INR 29.32 millions with the major cost- elements being Manpower, GPS Survey and Field Validation.

11. It would take nearly 15 months' time to cover the entire State of Tamil Nadu. It was proposed by Bharatidasan University to cover the 32 Districts in four phases with 8 districts in each phase. The field operations and other Geographic Information System (GIS) processes are planned Assembly-wise in each district.

12. It was decided that in the first phase the districts of Tiruvallur, Kancheepuram, Chennai, Coimbatore, Madurai, Tiruchi, Salem and Tirunelveli (having major urban agglomerations) would be

taken up and sanction accorded accordingly. After a review and, if necessary, mid- course correction/ refinement, sanction could be accorded for the remaining districts of the State but without any discontinuity in the implementation of the overall Project. The cost for the above 8 districts was arrived at INR 12 millions roundly and sanction issued accordingly [G.O.Ms.No.1097, Public (Elections-I) Department dt. 30.10.2009].