

# ELECTION COMMISSION OF INDIA

Nirvachan Sadan, Ashoka Road, New Delhi-110001

No- PN/ECI/41/2009

Dated 8<sup>th</sup> August, 2009

**Subject- Electronic Voting Machines- regarding**

## Press Note

The Election Commission had, in an extraordinary measure, invited those who have recently expressed reservations about the Electronic Voting Machine (EVM) to come and demonstrate the points made in their allegations from 3<sup>rd</sup> to 8<sup>th</sup> August 2009. Those invited included political parties, petitioners before various courts and some individuals who had been writing to the Commission on this issue. One hundred EVM samples were obtained on random basis from ten states namely, Andhra Pradesh, Delhi, Gujarat, Karnataka, Madhya Pradesh, Maharashtra, Punjab, Rajasthan, Tamil Nadu and Uttar Pradesh. These were kept at the Commission's office in readiness for scrutiny and for any application to establish its alleged fallibility. The EVMs were offered for such demonstration in the presence of a technical experts group as well as engineers representing the EVM manufacturers, BEL and ECIL. These engineers were especially called from Hyderabad and Bangalore and stationed in ECI's office for a whole week for this specific purpose. The outcome of this exercise is that none of the persons, who were given the opportunity, could actually demonstrate any tamperability of the ECI-EVM, in any of the hundred machines put on display. They either failed or chose not to demonstrate.

The Election Commission would like to underline that it always had a firm conviction and complete satisfaction that EVMs could not be tampered with. Its faith on the machine has never wavered through the conduct of elections in the last many years including the nation-wide general elections in 2004 and 2009 and over 30 general elections to state assemblies during the last five years. In the past, no one has been able to actually demonstrate that EVMs used by the Election Commission can be tampered with or manipulated. What has been demonstrated or claimed to have been demonstrated is on a privately assembled "look-alike of ECI-EVMs" and not the actual ECI-EVM. However, the aforesaid extraordinary measure was undertaken by the Election Commission in fulfillment of its responsibility not to allow even a small shade of doubt about any aspect of its operation and in order to set at rest any misgiving

anywhere. Today, the Commission once again completely reaffirms its faith in the infallibility of the EVMs. These are fully tamper-proof, as ever.

Dr. Kirit Somaiya, Vice-President, BJP, Maharashtra, accompanied by some others, visited the Commission on 7 August 2009 responding to the Commission's invitation. He categorically stated that he was not opposed to the use of EVMs and he had never wanted to do any demonstration about the tamperability of EVMs. He however made certain suggestions for consideration of the Commission in line with his earlier correspondence with ECI. Ms. Veena Singh, a candidate in recent Parliamentary election in Madhya Pradesh also visited the Commission and made certain general points regarding physical handling of EVMs. It was explained to her that there are sufficient safeguards to take care of such problems. Shri Satinath Chaudhury, a petitioner in the Supreme Court in 2004 on the EVM issue, came on 8<sup>th</sup> August 2009 and after making some attempts, failed to demonstrate that the EVM could be tampered with.

Shri Omesh Saigal, who visited the Commission on the same day, accompanied by some others, refused to demonstrate the points earlier raised by him, using any of the 100 actual ECI-EVMs, he was offered to choose from. In a letter, addressed to the Chief Election Commissioner and handed over to EC officials, he in turn wanted certain arrangements for him and his team of hardware and software professionals from a private company before coming to demonstrate about the tamperability of the EVM. He also offered to show what he claimed as possibility of tampering using his personal computer and a 'look alike' of the ECI-EVM, that was privately manufactured, and is also seen on several TV channels. It was pointed out to Shri Saigal that the ECI-EVM was not at all comparable with what he had brought. Based on this, the EC officials declined to deal with, what appeared to be an imitation machine, so as to avoid creating any confusion in public mind. Shri Saigal made also a request to the Commission to consider pre-poll audit of the EVMs.

The Supreme Court of India, while disposing of a petition filed by Shri V. V. Rao and three others belonging to the Jan Chaitanya Vedika, raising questions about use of Electronic Voting Machines in the elections, on 27 July 2009 observed that the petitioners could approach the Election Commission in the matter. Similar petitions were filed before three High Courts in the country. These are the Madras High Court, the Bombay High Court and the High Court of Madhya Pradesh (Jabalpur bench). These petitions also raise allegations about the possibility of tampering with the EVMs. The Mumbai Hig

dismissed the petition asking the petitioner to approach the Election Commission. The Election Commission has invited all these petitioners to come and demonstrate their points before the Commission. But none of them turned up for making a demonstration from 3<sup>rd</sup> August 2009 to 8th August 2009.

EVMs have served the country's elections well. These were introduced after long ranging political, technical and administrative consultations since 1979. The use of machines has helped prevent several electoral malpractices and resulted in more efficient conduct of elections. Judgments from various courts have upheld the use of EVMs and technical experts have endorsed the machines from time to time. In fact, the Karnataka High Court has hailed the EVM as 'a national pride'. Similarly, the Madras High Court, after elaborate consideration of the issue in a batch of petitions in 2001, rejected allegations that the EVMs could be tampered. The issues recently raised by petitioners in the Courts and by some others, broadly allege the possibility of tampering with the machine during the manufacturing process or while operating the machine. The following facts about ECI-EVMs conclusively rule out any such possibility.

### **Facts about EVMs used by ECI**

- i. ECI-EVMs are manufactured only by Electronics Corporation of India Limited (Department of Atomic Energy) and Bharat Electronics Limited (Ministry of Defence), both Central Public Sector Undertakings, which are entrusted with development of very high security product/equipment development.
- ii. The ECI-EVMs cannot be reprogrammed.
- iii. The software for this chip is developed in-house by a select group of engineers in the two PSUs independently from each other. A select software development group of 2-3 engineers designs the source code and this work is not sub-contracted.
- iv. The source code is so designed that it allows a voter to cast the vote only once. The next vote can be recorded only after the Presiding Officer enables the ballot on the Control Unit. In between the machine becomes dead to any signal from outside (except from the Control Unit).
- v. After completion of software design, testing and evaluation of the software is carried out by an independent testing group as per the software requirements specifications (SRS). This ensures that the software has really been written as per the requirements laid down for its intended use only.

- vi. After successful completion of such evaluation, machine code of the source programme code known as hex-code (not the source code itself) is given to the micro controller manufacturer for fusing in the micro controllers. From this machine code, the source code cannot be read. Source code is never handed over to anyone outside the software group.
- vii. Micro controller manufacturer initially provides engineering samples for evaluation. These samples are assembled into the EVM, evaluated and verified for functionality at great length. Bulk production clearance is given to micro controller manufacturer only after successful completion of this verification.
- viii. The source code for the EVM is stored under controlled conditions at all times. Checks and balances are in place to ensure that it is accessible to authorized personnel only.
- ix. During production, functional testing is done by production group as per the laid down quality plan and performance test procedures.
- x. Samples of EVMs from production batches are regularly checked for functionality by Quality Assurance Group, which is an independent group within the organizations.
- xi. Certain additional features were introduced in 2006 in ECI-EVMs such as dynamic coding between Ballot Unit and Control Unit, installation of real time clock, installation of full display system and date and time stamping of every key pressing in EVM. It is important to note that there was no modification of any type done at this stage in the basic functions of the machine.

### **Not comparable with EVMs Abroad**

The Commission has come across some comparisons between ECI-EVM and EVMs used by foreign countries. Such comparisons are both misplaced and misguided. Most of the systems used in other countries are PC based and running on operating Systems. Hence, these could be vulnerable to hacking. The EVM in India on the other hand is a fully standalone machine without being part of any network and with no provision for any input. As already stated, the software in the EVM chip is one time programmable and is burnt into the chip at the time of manufacture. Nothing can be written on the chip after manufacture. Thus the ECI-EVMs are fundamentally different from the voting machines and processes adopted in various foreign countries. Any surmise based on foreign studies or operating system based EVMs used

elsewhere would be completely erroneous. The ECI-EVMs cannot be compared with those EVMs.

### **Complete Procedural Security**

The Commission has in place elaborate administrative measures and procedural checks-and-balances aimed at prevention of any possible misuse or procedural lapses. These measures include rigorous pre-election test and inspection of each EVM by the technicians, two level randomization with the involvement of candidates and their agents, for the random allotment of the EVMs to various constituencies and their subsequent dispatch to various polling stations. Preparation of the EVMs for elections is done in the presence of the candidates/their agents and sealing of the prepared EVMs is also done in candidate's or their agent's presence. Thread seal are fixed on the EVM where again, the candidates or their representatives put their own signature and seals. Paper seals guards against any unauthorized access to the EVMs after preparation. EVMs are then kept in sealed strong rooms with provision for the candidates to put their individual seals on the strong rooms. The EVMs are randomized twice over. The list of EVMs going to individual polling stations is given to the candidates for them to check, on the poll day the actual machine, that is used in that polling station. Furthermore a mock poll is conducted in the presence of polling agents, when the polling agents can verify, inter-alia, the EVM numbers. A mock poll certificate is taken before the commencement of poll. After the mock poll the machine is set back to zero and green paper seal printed at Government Security Press is put in, where once again every polling agent is allowed to put his/her signature. After the polls, the EVM are also sealed in such a manner that there is no physical access to any of the buttons on the EVMs. Indeed there is no access to the EVMs itself since the carrying case is sealed completely. The machines are put in the strong room again in presence of the candidates, observer of the commission under video camera surveillance. The strong room is allowed to be guarded by the supporters of the candidates besides the police protection provided to strong rooms. At every step, the EVM is very well protected and elaborate arrangements are in place for the same.

**(K.N.BHAR )  
UNDER SECRETARY**