Prototype of an Electronic Voting Machine used in a survey in past federal elections in Mexico.

Mariano Gamboa*, Gabriel Méndez*, Aldo Orozco*, Gerardo Martínez**, Oscar Escobedo**

**Centro de Investigación y de Estudios Avanzados, Av. Instituto Politécnico Nacional No. 2508, Mexico City, Mexico*

**Instituto Federal Electoral, Viaducto Tlalpan No. 100, MéxicoCity, Mexico

mgamboaz@cinvestav.mx, gmendez@cinvestav.mx, aorozco@cinvestav.mx, gerardo.martinez@ife.org.mx, oscar.escobedo@ife.org.mx

Abstract— **This document presents the results achieved in the design, development and manufacturing process to deliver 1,500 Electronic Voting Machines, used by the Federal Electoral Authority (IFE), to apply a survey to voters, in last President election's day in Mexico (July the 1st, 2012). Questions asked addressed IFE´s performance and the convenience to use electronic voting machines in next federal election´s day. Results were positive and more than majority of citizens surveyed, agreed to start using electronic voting devices in the future. Experience generated with this survey´s deployment will complete the whole process of use, that will allow us to include required modifications for its successful use in future elections.**

EVM: Electronic Voting Machine
IFE: Federal Electoral Authority
CINVESTAV: Centro de Investigación y de Estudios Avanzados

Dr. Mariano Gamboa. This author received the Electronic Doctorate Degree from the Paul Sabatier University, Toulouse, France and a Post-doctorate degree from the 'Systems Architecture and Analysis Laboratory' belonging to the National Scientific Research Center (LAAS-CNRS). Also he holds two Master Degrees from Tecnológico de Monterrey University (Finance & Public Administration) and the Master Degree on Electric Engineering from Centro de Investigación y de Estudios Avanzados del Instituto Politécnico Nacional (CINVESTAV-IPN), institutions based in Mexico. Additionally, he has received two postgraduate diplomas: "The Role of the Chief Information Officer in Government Innovation" from Georgetown University and 'PMI based Project Management' from Tecnológico de Monterrey University-CEM.

He has participated in more than forty IT&C projects for several institutions in the Country like Mexico City's Department 'Miguel Hidalgo', the Puebla State Government, Culiacán County Government, the Mexican Institute of Industrial Protection, la 'Secretaria de Salud' (Ministry of Health), the 'Secretaria de Educación Pública', the National Health Security Institute and more.
Actually, as General Coordinator of Information Technology & Communications Services, he is responsible in CINVESTAV of several projects with high impact in the research community and in the society like: the fiber optics network for Supercomputing, the biggest (computer power) supercomputing cluster in Mexico (named Xiuhcoatl), Management of the IT&C platform and Operations of the biggest Open eLearning University of the country, the Electonic Voting Machine prototype design, development and manufacturing, and more.

Dr. Gamboa has been Special Projects Director in CONACYT (Mexican Science & Technology Commission), General Director of the Mexico-Korea IT Cooperation Center and has held several positions in Institutions (Nafin, FIDETEC, ITESM.CCM) to incubate new companies and to develop the field of IT&C.

Gabriel Méndez. He received the B.Sc. degree in electronics and electrical engineeering from Universidad Nacional Autónoma de México. Also he has got the equivalent studies of an M.Sc. degree in Computer Networks from the Ecole Supérieur d'Electricité (Supélec), France, in 1982; also he received a postgraduate diploma in Marketing from Universidad Anahuac, Mexico City.

At CINVESTAV, as Project Coordinator, he handles diverse endeavors, among them: the electronic voting machine (EVM) project management and the Technical consultancy coordination to increase the successful use of computers in elementary education, in thousands of classrooms. Among the projects under his coordination are: the development and operation of the initial computing platform for the 'virtual university' (eLearning) of Méxi co (actually with more than 60,000 registered students) and consulting services to develop the 'GoToMarket' strategy for Mexican companies (Contact center technology), to be able to market their products in USA via the TechBA program (Technology Business Acceleration- Secretaria de Economía).

Aldo Gustavo Orozco Lugo was born in Guadalajara City, México, in 1970. He received the B.Sc. degree in electronics and communications engin eering from University of Guadalajara in 1993, the M.Sc. degree in electrical engineering specialized in communications from CINVESTAV-IPN, M éxico, in 1997 and the Ph.D. degree in electrical engineering specialized in digital signal processing for communications from the University of Lee ds, United Kingdom, in 2000. He is currently a principal member of the research staff in the electrical engineering department at CINVESTAV-IPN, México City. His research interests include space-time signal processing, wideband channel modeling, analog and digital communication systems, an tenna array technology and radar. Dr. Orozco is a Member of the IEEE and is a Texas Instruments certified instructor in digital signal processing a nd processors.