

ICT and Elections

THEMATIC WORKSHOP

Information Technology and Elections Management

Informed Decisions for Sustainable Outcomes



European Commission
Development and Cooperation DG
EuropeAid



United Nations
Development Programme

5 - 9 March 2012, Mombasa, Kenya

Transmission of Election Results – The Kenyan Case.

Co-presented by Immaculate Kassait-Director
Voter Registration and Electoral Operations &
Dismas Ong'ondi Director ICT - IEBC

TRANSMISSION OF RESULTS



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Overview of the Presentation

- Definitions;
- Introduction;
- Background
- Operation perspectives;
- Highlights;
- EVT components;
- How it works;
- Pilot testing;
- Key Challenges;
- Lessons learnt.



Definitions

- The Electronic Vote Tally (EVT) system: This is processes by which an election officer send the provisional results from the polling station using a GPRS-enabled device (mobile phone, laptop etc.)



Definitions

- EVT can be compared to the common PVT which is used by observer groups for independent verification of results during elections. The distinction of EVT from PVT is that while as PVT is used for sampled areas EVT is used to transmit results from all polling stations.
- PVT was first used by the National Citizens' Movement for Free Elections (NAMFREL) in the 1986 elections in the Philippines (source ACE).



Introduction

- The country has a population of 38 Million people as per the 2009 Census.
- 290 constituencies, 1450 County Assembly Wards and over 20,000 Registration Centres.
- Database of 12.4 Million Voters.
- 6 elective positions (President, Parliamentary, Governor, Senator, Women representative and County Ward Representative.



Introduction

- The 2007 General elections were marred with post-elections violence which was as result of disputed Presidential results.
- As a result and independent Commission headed by a South African Retired Judge was set up which made radical proposals that resulted in disbandment of Electoral Commission of Kenya.
- The Electronic Vote Tally system was created based on one of the mandate of the previous commission (IIEC) which was to:
 - **Develop of a modern system for collection, collation, transmission, and tallying of electoral data**
- Under Article 88 of the Constitution of Kenya, 2010, the IEBC is responsible for:
 - **The commission is responsible for conducting elections using appropriate technology and approaches in the performance of its functions; and such other functions as are provided for by the Constitution or any other written law.**



Overview of Operational Issues

- Procurement -dependant of each country(hardware & software)
- Installation of the software
- Training of Officials- All Presiding officers (must know how to use a phone)
- Distribution of phones to polling stations
- Setting up the tallying centre
- Pre-testing- Polling day Eve.
- Utilisation of the phone
- Retrieval and warehousing of materials



Background

- Designed for GPRS-enabled devices
- Tallies and transmits provisional results from polling stations simultaneous to constituency and national tallying centres
- Integrates with Digital Maps
- Electronic Vote Transmission (EVT) System
- Transmission of Provisional Results from Stations

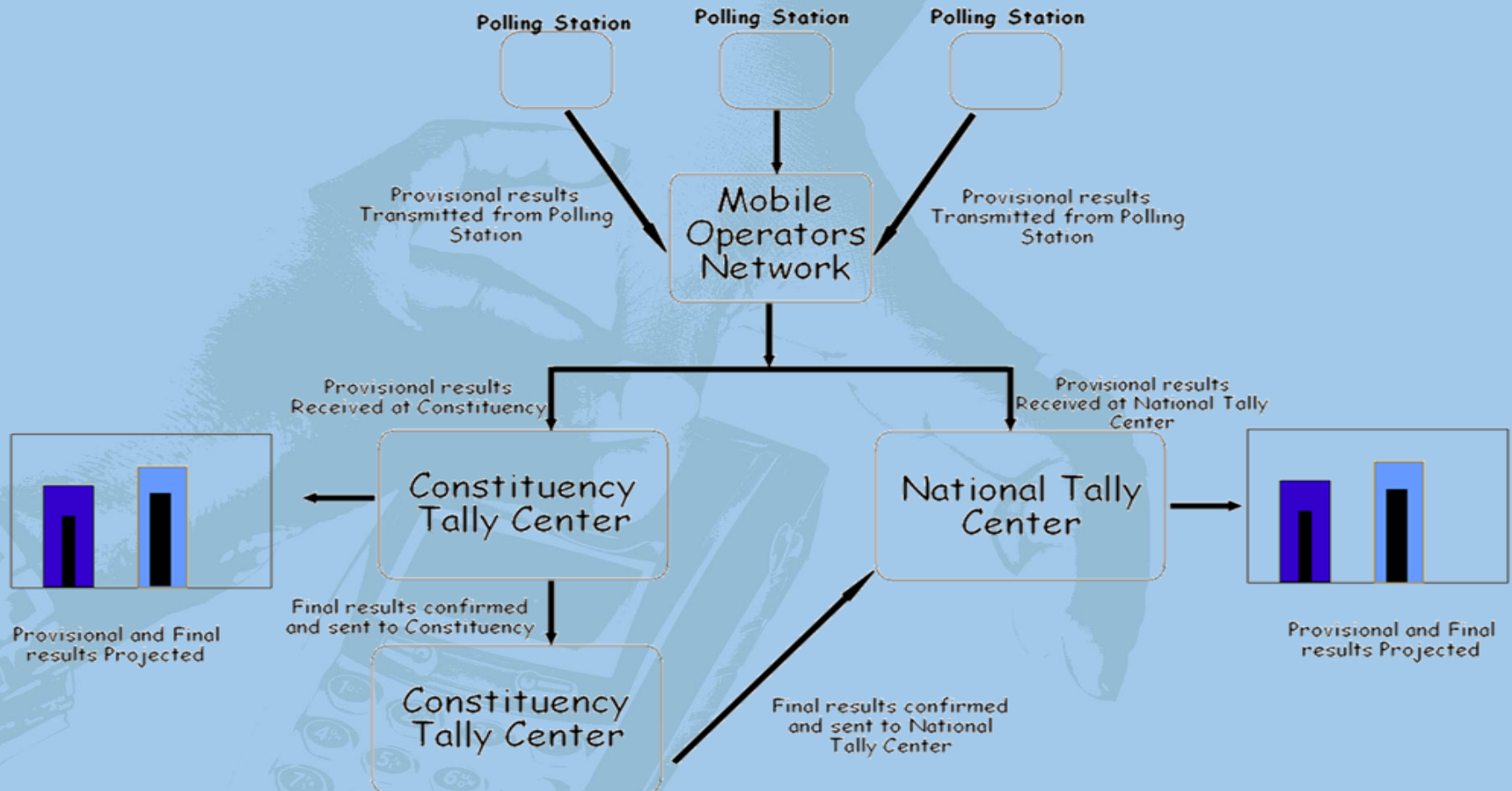


EVT: Components

- Mobile Phone
- Laptops
- Mid Range Server
- GPRS/EDGE/3G Modems



How it Works



Pilot Testing of EVT

Initial Testing in:

- South Mugirango on June 10th 2010 with 110 laptops
- Matuga on July 12th 2010 with 64 to 37 ratio for mobiles and computers respectively making a total 101.
- Referendum in 20,750 Polling stations with mobile phones



Outcome of the EVT

ELECTION	DATE	NO. OF POLLING STATION	RESULTS RECEIVED	SUCCESS RATE
SOUTH MUGIRANGO	10/06/2010	110	91	82%
MATUGA	12/07/2010	101	74	73%
REFERENDUM	04/08/2010	20,750	15,095	72%
JUJA	20/09/2010	69	69	100%
STAREHE	20/09/2010	22	22	100%
MAKADARA	20/09/2010	26	26	100%
WAJIR SOUTH	13/10/2010	68	68	100%
KIRINYAGA	16/02/2011	50	50	100%
IKOLOMANI	23/05/2011	63	63	100%
KAMUKUNJI	18/08/2011	23	23	100%
KITUTU MASABA	28/11/2011	111	111	100%



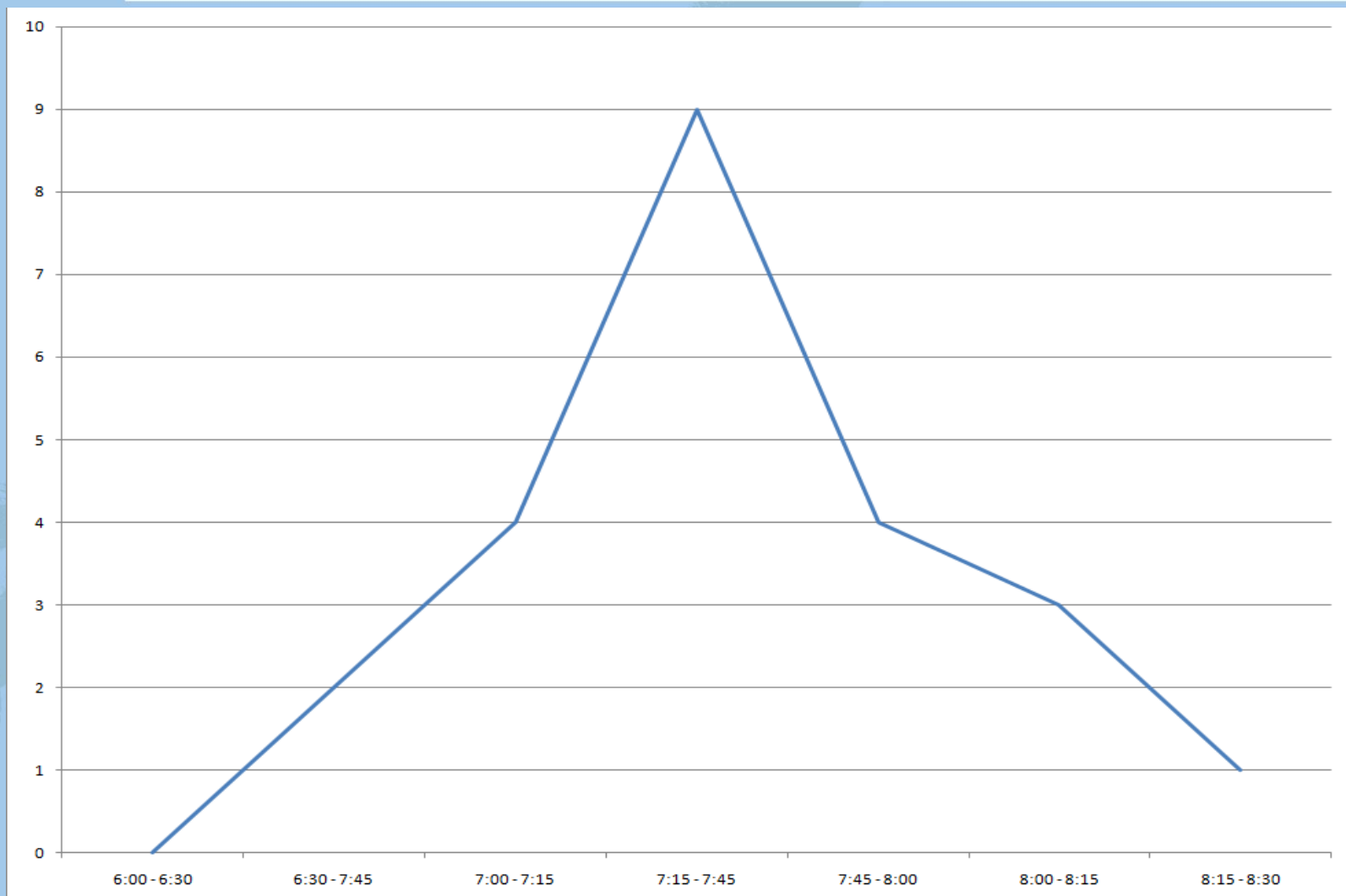
Received Results Time Stamp

	ELECTION	Polling Station	Polling Code	Registered Voters	Time received
1	JUJA				
	FIRST POLLING STATION	EAGADS HALL	100/025	185	18:40
	LAST POLLING STATION	NEW GARISSA RD. PR. SCH	100/017	3,897	21:39
2	STAREHE				
	FIRST POLLING STATION	PANGANI GIRLS HIGH SCH.	003/011	3,769	18:44
	LAST POLLING STATION	KENYA POLYTECHNIC	003/006	7,257	21:13
3	MAKADARA				
	FIRST POLLING STATION	SINAI CENTRE	001/024	3,649	19:12
	LAST POLLING STATION	MAKONGENI PR. SCH	001/009	2,988	21:35
4	WAJIR SOUTH				
	FIRST POLLING STATION	KANJARA CENTRE	037/037	56	17:42
	LAST POLLING STATION	SHARIFA PANS (MOBILE)	037/059	270	0:42
5	KIRINYAGA CENTRAL				
	FIRST POLLING STATION	KANGWARE TEA BUYING	090/034	379	17:57
	LAST POLLING STATION	MUTITU PR. SCH.	090/014	1,649	20:36
6	REFERENDUM				
	FIRST POLLING STATION	AHMED QALLOW DAM	031/032		04-08-10 17:02
	LAST POLLING STATION	MATAMUKA	043/025		05-08-10 11:30



Kirinyaga Central Transmission Timestamps

NUMBER OF POLLING STATIONS

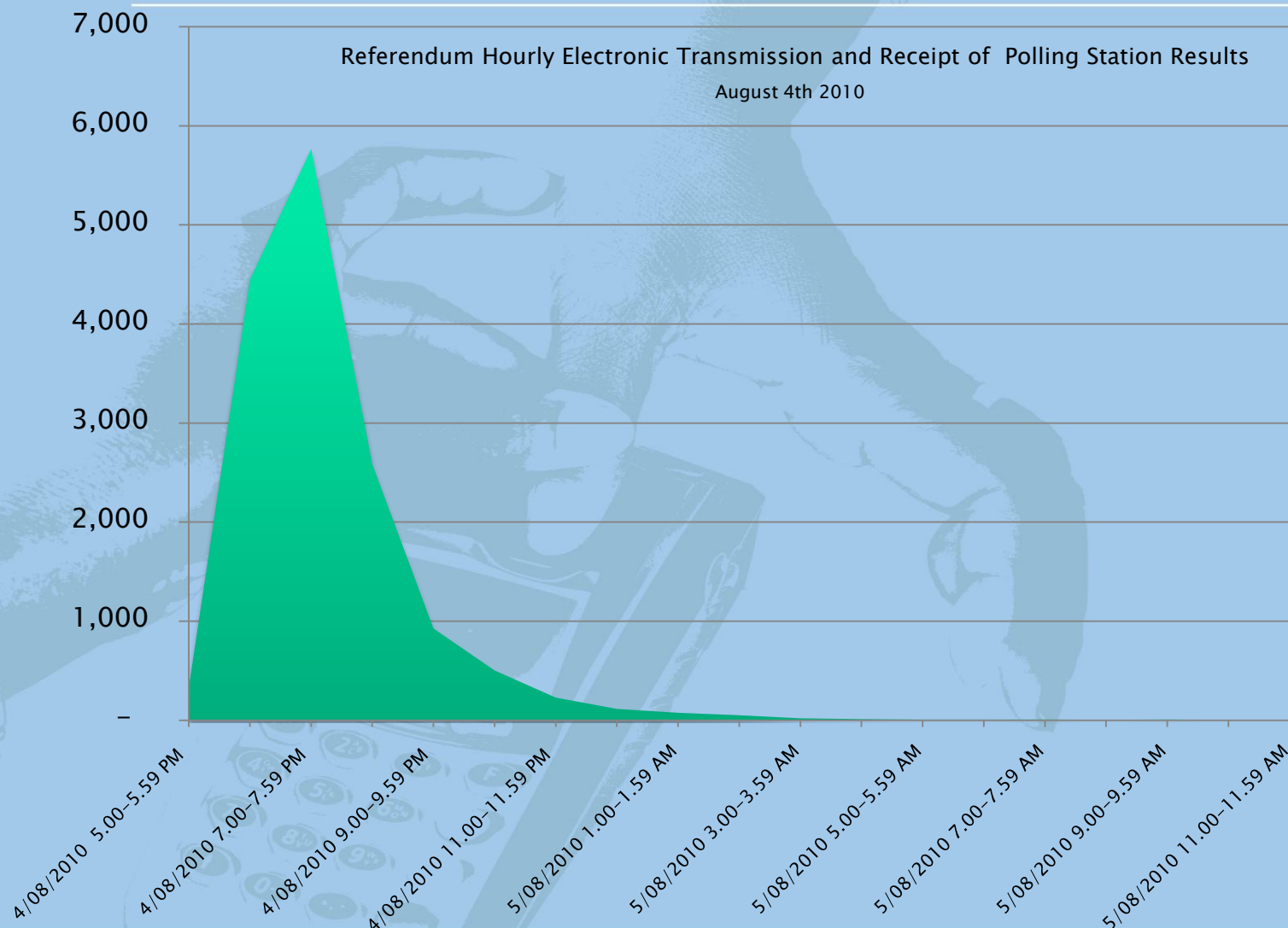


Referendum Result Analysis

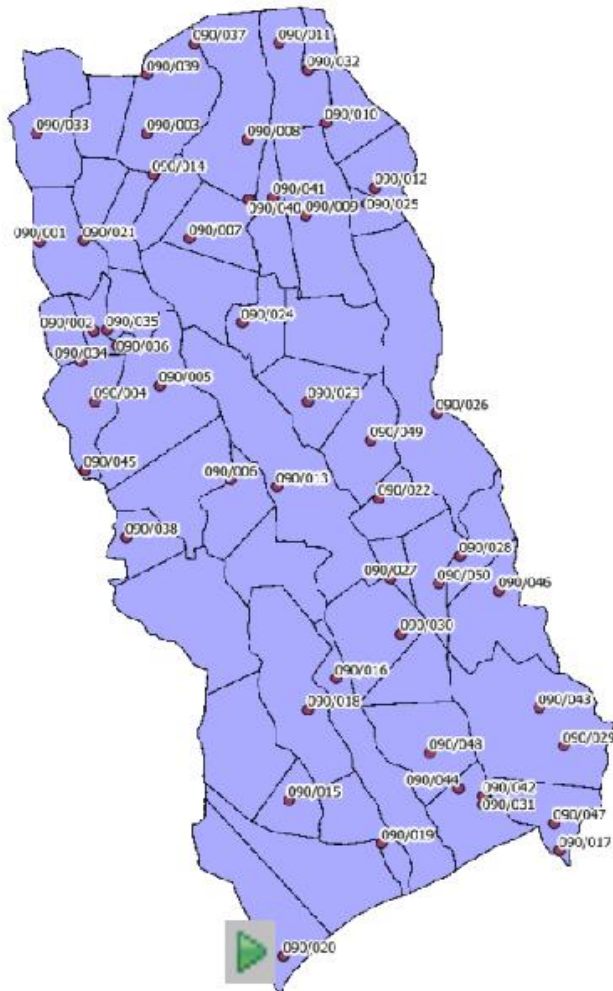
Results Received Report		
Date Received	Total Results within the Hour	% Com
4/08/2010 5.00-5.59 PM	328	2.2%
4/08/2010 6.00-6.59 PM	4,447	31.6%
4/08/2010 7.00-7.59 PM	5,764	69.8%
4/08/2010 8.00-8.59 PM	2,584	86.9%
4/08/2010 9.00-9.59 PM	927	93.1%
4/08/2010 10.00-10.59 PM	503	96.4%
4/08/2010 11.00-11.59 PM	229	97.9%
5/08/2010 12.00-12.59 AM	115	98.7%
5/08/2010 1.00-1.59 AM	76	99.2%
5/08/2010 2.00-2.59 AM	51	99.5%
5/08/2010 3.00-3.59 AM	20	99.7%
5/08/2010 4.00-4.59 AM	12	99.7%
5/08/2010 5.00-5.59 AM	7	99.8%
5/08/2010 6.00-6.59 AM	7	99.8%
5/08/2010 7.00-7.59 AM	8	99.9%
5/08/2010 8.00-8.59 AM	4	99.9%
5/08/2010 9.00-9.59 AM	8	100.0%
5/08/2010 10.00-10.59 AM	3	100.0%
5/08/2010 11.00-11.59 AM	2	100.0%
Total:	15,095	
80% of 20,700	16,560	
Success Rate	91.2%	



Referendum Result Analysis



Integration of Digital Maps



INTERIM INDEPENDENT ELECTORAL COMMISSION
YOUR VOTE, YOUR FUTURE



ATTENTION

PARLIAMENTARY RESULTS FROM
KIAGA PR. SCH.
POLLING STATION -090/020 AT
KIRINYAGA CENTRAL
CONSTITUENCY HAVE JUST BEEN
RECEIVED



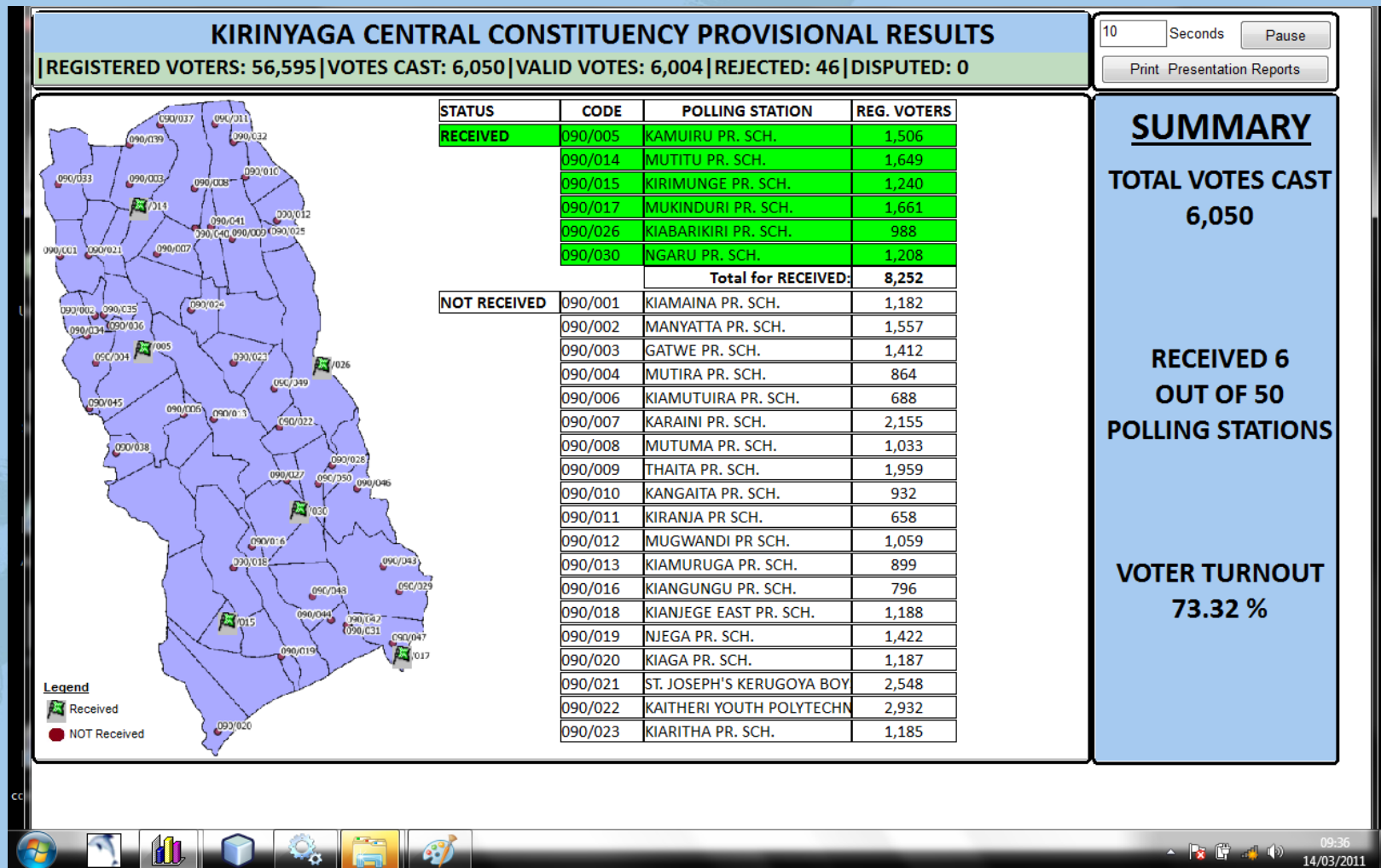
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Integration of Digital Maps.../2



EVT: Controls

- Administrative controls
 - Election laws, regulations, policies & procedures;
 - Personnel training and management structure;
 - Pre-election network mappings and testing;
 - No planned network maintenance on election day;
 - Results are provisional;
 - Early engagement of key stakeholders;



EVT: Controls.../2

- Physical controls
 - Network segregation (VPNs, static IPs, equipment and device inventory);
 - Work area separation / control zones;
- Technical controls
 - Data encryption;
 - Devices are “station locked”;
 - Simultaneous transmission to two centres;
 - Continuous data backup.

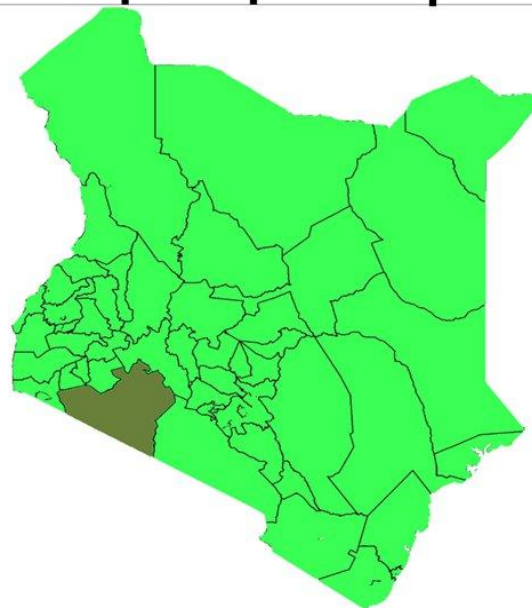
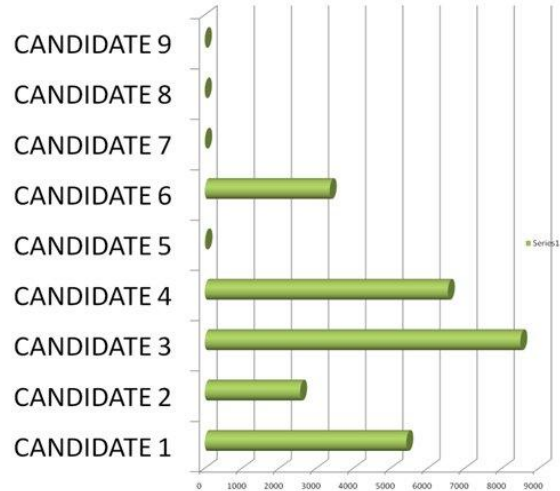


Forward to 2012 and Beyond

PROVISIONAL NATIONAL PRESIDENTIAL RESULTS

CANDIDATE NAME	PARTY NAME	%	POSITION	VOTES
CANDIDATE 1	PARTY A	18%	3	698,145
CANDIDATE 2	PARTY B	10%	6	203,432

NAROK COUNTY



NAROK COUNTY PRESIDENTIAL TALLY

CANDIDATE 3	35%
CANDIDATE 4	24%
CANDIDATE 1	20%
CANDIDATE 6	12%
CANDIDATE 2	6%
CANDIDATE 5	1%
CANDIDATE 8	1%
CANDIDATE 9	1%

NATIONALS RESULTS RECEIVED

21 OUT OF 47 COUNTIES
153 OUT OF 290 CONSTITUENCIES
752 OUT OF 1450 WARDS

VOTES STATISTICS

NATIONAL REG VOTERS: 16,789,032
VALID VOTES CAST: 9,801,123
VOTER TURNOUT: 67%

COUNTY SUMMARY

RECEIVED 8/12 CONS

REG VOTERS: 210,021

VALID VOTES: 178,900

VOTER TURNOUT 80%

SEATS WON MP:-> PARTY A:27 PARTY B:39 PARTY C: 32 PARTY D:29 PARTY E:2 PARTY F:2 PARTY



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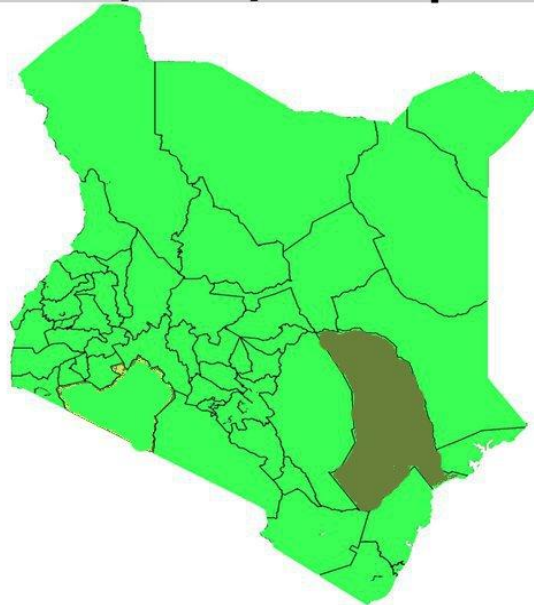
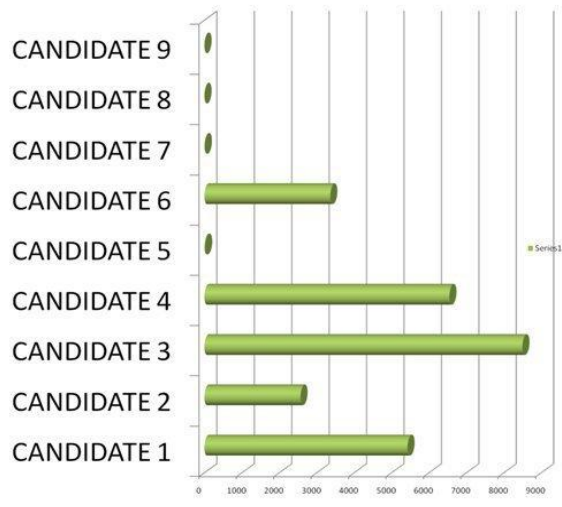
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TANA RIVER COUNTY



TANA RIVER COUNTY PRESIDENTIAL TALLY

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CANDIDATE 4	24%
CANDIDATE 1	10%
CANDIDATE 6	12%
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Key Challenges

- Initial Resistance from the Political Class
- Interactive Integration to Digital Maps
- Inadequate Network Coverage
- Secure Network Interconnectivity
- Mobile Application Security
- Warehousing of Devices
- Inadequate Legal Framework
- Restrictive Mobile Phone User Interface
- Ownership Rights



Lessons Learnt

- Plan Early, Test Adequately the Implement
- Involve and Educate Stakeholders Early
- Provide a Legal Framework.
- Develop Internal Expertise For the System
- Avoid Over-reliance on a Single Network Operator.
- Build Trust – allow independent testing / certification / code review.



Why IIEC has made elections boring

By LUKOYE ATWOLI

Sunday Nation 26 September 2010

- Elections have become boring!
- No more secrecy in the electoral process.
- No more night vigils by media houses.
- IIEC has robbed election nights of their old glamour and palpable tension.
- Winners are known in the early evening new!



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KIRINYAGA CENTRAL CONSTITUENCY PROVISIONAL RESULTS				20 Seconds Pause	
REGISTERED VOTERS: 56,595 VOTES CAST: 36,066 VALID VOTES: 35,653 REJECTED: 413 DISPUTED: 0				Print Presentation Reports	
CANDIDATE	PARTY	VOTES	% VOTES	SUMMARY TOTAL VOTES CAST 36,066 RECEIVED 47 OUT OF 50 POLLING STATIONS VOTER TURNOUT 68.11 %	
MWANIKI HENRY MURIUKI	DP	1,335	4%		
KARABA DANIEL DICKSON	NARC K	15,064	42%		
GITARI JOSEPH GACHOKI	PNU	17,760	50%		
NJERU SAMUEL KAGOIYO	FORD-K	99	0%		
NGUNYI BETH WAMBURA	KNC	849	2%		
NGARI PETER MURIMI	SDP	377	1%		
MWAI DUNCAN MURAGURI	PPK	169	0%		
Total:		35,653			



A Section of Voters watching projection of Provisional Results Transmission



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A Section of Voters watching projection of Provisional Results Transmission



A light blue background featuring a faint, stylized image of two hands holding a mobile phone. The hands are positioned as if they are about to use the phone, with fingers slightly curled. The phone is a basic feature phone with a small screen and a numeric keypad.

ASANTENI SANA NA KARIBUNI KENYA



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