

Appendix 2G

Assessment of Documentation and Procedures

INSTITUTE OF PUBLIC ADMINISTRATION

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1.0 Executive Summary

The Institute of Public Administration, on behalf of the Commission on Electronic Voting, undertook a review of the general and environmental controls of the proposed voting system for the June 2004 elections.

A team of external and internal IPA expert election practitioners, auditors and accountants, examined and evaluated the regulations, policies and manuals for the forthcoming June 2004 elections with particular emphasis on completeness, accuracy, validity, secrecy and compliance with robust control arrangements.

A particular focus of the Commission's work is on the secrecy and accuracy of the forthcoming elections.

Secrecy, in terms of the election, is interpreted as the concealment or keeping private of the act of voting and in the exercise of a preference. The voting machine or ballot box is private to the individual voter and this right to privacy should not be infringed, whatever voting system is utilised.

Accuracy, in terms of the election, is defined as ensuring correctness and freedom from mistake or error. Accuracy also implies exactness, careful precision and conformity to a pre-set standard. The accuracy of the election and the casting of votes correctly, exactly and error-free is a fundamental issue for the conduct of any election. The instructions provided to the voter to ensure he/she can cast his/her vote accurately and in accordance with their wishes is an important part of the drive for accuracy in elections.

The significant issues, as seen by the IPA group, included:

- The challenge to recruit appropriately competent and suitable polling station staff.
- The necessity for effective and quality training to be provided and other instruction options, briefings, guidance etc to be arranged, if required.
- There are some areas for improvement within the guidance memoranda and system manuals.
- A focussed and positive public relations campaign, explaining electronic voting, is necessary to engender public confidence and enthusiasm for the new system.
- The input of special and postal votes will involve agents of candidates with obvious implications for secrecy of votes cast. The input process, as currently envisaged, may slow the count and result declaration stages.
- The additional complexity in situations where there will be three and in some instances four ballot papers on the machine or where there are numerous candidates may be confusing for some voters and overly complicate the efficient conduct of the election.
- The need to anticipate the main risk issues and to agree actions to deal with these issues. The most prevalent risk factor identified in this review was behavioural, people and personnel, rather than the equipment or technology.

The proposed recommendations include:

- Careful recruitment and attraction of competent individuals to work within the polling stations.
- Detailed consideration and review of the fees order should be undertaken and other benefits specified to attract and retain quality applicants.

- Additional training provision should be considered, as appropriate, to ensure roles, responsibilities and functions are clearly understood. Options could include timely, just-in-time and refresher training and briefing sessions, documentation, help desks, drop-in clinics and mentoring or coaching.
- The areas for improvement identified within the system manuals should be incorporated in order to enhance the guidance available.
- The PR campaign should focus on simple, repeated and high impact messages – proactive rather than reactive.
- The instructions to voters, with multiple ballot papers, should be clear, succinct and facilitate the complete and accurate casting of their votes.
- Detailed consideration should be given as to how special and postal votes are to be read in and the time at which this may happen, to avoid possible count delays.

Summary conclusion

The overall control environment, within the electronic voting system, is quite strong. Indeed, in some respects, the electronic system is likely to produce greater accuracy and avoidance of potential human error. It will also lead to significantly enhanced efficiency at the count.

An election is not solely concerned with the physical machinery. It concerns a whole process that incorporates strategic planning; with national, regional and local operations and logistical arrangements; with briefings, training and guidance of ballot administration personnel; with processes and procedures on election day and with security and controls at count centres. In assessing risk to the entire forthcoming election process, the IPA Expert Group concluded, based on this review of general controls, that a significant potential risk this year is not the operation or processes surrounding the use of the new voting machines, rather, the ‘people behaviour’ at the ballot box and whether the instructions are sufficiently clear and lucid to enable members of the voting public to cast their votes accurately and in accordance with their intended preferences.

In arriving at its assessment of the “control environment”, the IPA Group adjudge that there is clarity of accountabilities among those charged with running the election; that there is high-level commitment to ensure that the elections are conducted smoothly and successfully and to the highest ethical norms. Such recommendations, as we make, are aimed at strengthening the efficacy and efficiency of the ballot administration process where that might appear to be warranted. If the election is conducted in accordance with proposed arrangements – subject to the recommendations and other considerations detailed in this report – it is our opinion that the objectives of *secrecy* and *accuracy* and *overall integrity* will be achieved.

2.0 Introduction

2.1 Background

The Commission on Electronic Voting was established on 1 March 2004 and is required by its terms of reference to report on the secrecy and accuracy of the electronic voting and counting system for the June 2004 elections. It proceeded to engage consultants and other specialists to review and test various aspects of the proposed voting arrangements.

The Institute of Public Administration accepted the invitation to meet the Commission and

forwarded an outline proposal on how it could usefully contribute and add value to the Commission's deliberations.

The essence of the proposal was an IPA group review of the general and environmental controls around the election process as distinct from detailed application and software testing of the election process.

2.2 Review Objectives and Scope

The objectives and scope of the review were as follows:

Objectives

- To examine and review the regulations, instructions, policies and procedures which have been utilised in previous, paper-based elections.
- To examine and review the regulations, instructions, policies and procedures which have been prepared for usage in the June 2004 elections.
- To compare and contrast both sets of regulations etc. to identify perceived gaps, weaknesses or omissions.
- To consider the general controls around the application with particular emphasis on the impact on those tasked with conducting the elections, i.e. returning officers, presiding officers and poll clerks.
- To carry out a "walk through" and compliance tests on each stage of the process and assess same, in terms of security and accuracy.
- To report, as requested, to the Commission at various stages in the assignment.

Scope

- The regulations, policies, procedures etc. are those produced by the Department of the Environment, Heritage and Local Government (DEHLG) and include all instructions issued to all key stakeholders in the election process.
- The detailed list of questions and comments, coupled with the review of documentation and tests, would facilitate a statement on the arrangements in place for the June 2004 elections.

2.3 Methodology and Tasks

Methodology

The focus of the review was on the respective controls, guidance, regulations and procedures of previous elections and those currently available for the June 2004 election; in terms of robustness, appropriateness and efficacy.

This included the identification of the substantive procedural and technological changes that will

apply within electronic voting and on the extent to which these are reasonable and strong, from a voting management and public administration perspective, and the overall control environment within which electronic voting would occur.

The review team, assembled by the IPA as part of its analysis of the control environment, included expert practitioners and public servants with many years of “hands-on” involvement with various ballots and elections; local, Dáil, European, Presidential, European company works council ballots, pension trustee ballots, etc. The various roles occupied by the team included chief returning officer, returning officers, inspectors, presiding officers, poll clerks, count staff, Garda representative, auditors and accountants, academic researchers, training specialists and local government specialists.

Tasks

The detailed tasks included:

- Sourcing, securing and detailed examination of electoral regulations, policies and procedures for Irish elections.
- Evaluation of guidelines, rules and guidance manuals issued to key stakeholders for the 2004 elections.
- Evaluation of the Integrated Election Software System manuals in terms of comprehensibility and completeness.
- Off site meetings with European local returning officer staff to discuss relevant issues pertaining to the elections.
- Review of documentation and files at the DEHLG Franchise Section at Custom House.
- Preparation of summaries of the detailed manuals and identification of key control issues.
- Preparation of flow diagrams for key election activities.
- Conduct of a workshop on the 13th April 2004 with an expert group which sought to identify potential control issues/problems/challenges that the 2004 elections presented and also the opportunities or innovations which the new system could potentially deliver.
- Within the workshop, a “hands-on” review of the voting machines was undertaken. The session included the raising of detailed queries with the IPA training specialist who has been involved, on a countrywide basis, with the initial “training of trainers” for the election.
- Within the group, some basic risk-assessment and possible key risk factors were identified and ranked in terms of impact, probability and control effectiveness.
- Summary conclusions and areas for possible improvement were identified which could enhance the effective implementation of the ballot in an electronic voting environment.

2.4 Secrecy and accuracy considerations

A particular focus of the Commission is on secrecy and accuracy of the forthcoming elections. In undertaking our review, consistent with the agreed objectives set out above, the secrecy and accuracy dimensions and how these would be reflected in the conduct of the elections, underpinned our analysis and evaluation.

Secrecy, in terms of the election, is interpreted as the concealment or keeping private the act of voting and the exercise of a preference. The voting machine or ballot box is private to the individual voter and this right to privacy should not be infringed, whatever voting system is utilised.

Accuracy, in terms of the election, is defined as ensuring correctness and freedom from mistake or error. Accuracy also implies exactness, careful precision and conformity to a pre-set standard. The accuracy of the election and the casting of votes correctly, exactly and error free has wide implications for the whole conduct of the poll, including the instructions provided to the voter to ensure he/she can cast their vote accurately and in accordance with their wishes.

This report focuses on the control environment and control processes which can support the effective conduct and functioning of the elections which are fundamental in addressing secrecy and accuracy issues. The report sections cover; control and risk assessment, quality of guidance memoranda and system manuals and the key issues which may impact on the election process.

Within the proposed system, there are three distinct levels designated i.e. Local, Constituency and Service. These levels relate to the role and responsibilities of the Local Returning Officer (LRO), Constituency Returning Officer (CRO) for the four European election constituencies and the European Local Returning Officer (ELRO). These abbreviations and terms are reflected in this report.

Section 8.0 details the main findings and recommendations from the review.

3.0 Control and Risk Assessment

3.1 Basic Control Systems

There are a number of key controls or system characteristics that should be evident within a strong and effective control environment. The following table sets out these controls and the extent to which these are evident in the electronic-voting system.

TABLE: Key System Controls

Key Control	Electronic voting System
<p>Segregation of duties – no one person or organisation has unfettered access or control</p>	<p>The division of roles and responsibilities between LRO, CRO and the ELRO and the clarification of cross over and transfer of documentation etc. from one party to the next provides strong evidence of this control.</p> <p>At a high level, the nomination of candidates and production of ballot papers is independent of the operation and supervision and execution of the poll and the custody of the ballot modules. Similarly, the count and declaration of result is separate from the production of the voting database.</p> <p>At a lower level, the operation of the polling stations with presiding officers, poll clerks and/or technicians and a clear division of duties from register sign-off, to issue of permit ticket, to voting at the machine is a strong control.</p> <p>The guidance on set up and close of poll also requires at least two people,</p>

Key Control	Electronic voting System
	which also acts as an internal check.
Physical Controls – Restriction of access and safeguarding of the equipment or assets	The IES Software and the machine keypads provide both computer and password restrictions on capacity to access different levels and also physical barriers to interference with the voting machine. The existence of seals and keys confirm these controls. The sealing of the ballot module envelope, for return to count centre, is a further example of the control in operation.
Organisational Controls – Including clear statements of responsibility and accountability	The guidance memoranda and the system manuals provide very detailed information on the responsibilities of each level, i.e. local, constituency and service. Our review of the system and testing of regulations and procedures confirmed (a) the existence of these controls and (b) clarity of understanding by these key stakeholders of their reciprocal responsibilities.
Authorisation and Approval	<p>This is related to the previous control with the emphasis on the authority of individual officials in the conduct of the elections. Again, the guidance memoranda are quite specific in this regard.</p> <p>The Presiding Officer manual, currently under preparation, and the instructions for polling station staff will specify the authority levels and role requirements within the polling station. For example, the authority to remove the ballot modules, to certify and authorise the opening and closing of poll printout and to ensure custody and dispatch to count centre, resides with the Presiding Officer.</p>
Supervision Control – oversight of the function of the system and ensuring adequate performance in carrying out duties	The appointment of appropriately qualified and competent staff is very important. For this, as with previous elections, there will be inspectors routinely visiting the polling stations to check on occurrences and current position at each station.
Numerical and Accounting Controls – use of account details and reconciliation to validate activities	The IES and the voting machines include several levels of arithmetic and accounting controls, e.g. number of ballot modules, number of polling stations, number of votes cast, standby etc. These can be authenticated from physical checks and verifications. The reconciliation and verification aspects are key parts of election control and must be thoroughly complied with.

Key Control	Electronic voting System
Management Control Systems – overall or higher level supervision of system, strategic and operational planning etc. These controls provide the framework within which the other controls are exercised.	The role of the DEHLG and the adherence to a robust and strong control environment and control culture are key aspects for this control. The involvement of key stakeholders groups, an overall project plan, timescales and timelines, agreed policy and procedures statements are evidence of this control.
Personnel Controls – appropriately qualified, proficient, competent and trained individuals who can perform their duties to an acceptable standard	Given the cyclical nature and the irregular pattern for calling of elections, the conduct of polls require the recruitment, on an ad-hoc basis, of thousands of staff. This issue is the most problematic aspect for the forthcoming elections as (a) there is a change in system, (b) the staff are familiar with the older system, (c) tendency to use the same people (d) training is being offered, but its impact is somewhat unknown and (e) the level of remuneration for a potentially 15 to 16 hour day may be insufficient. Appropriately qualified and competent polling station staff are key to the effective conduct of these elections.

General and Application Controls

If we consider the electronic voting system as mainly a computer system, there are two discrete categories of controls to consider. *Application controls* are designed to ensure that the computer application (i.e. input, processing, storage and output) runs smoothly and accurately and in accordance with the system specification. In contrast, *general controls* for the electronic voting system are all the other controls over the environment within which the system operates. The application can run efficiently and effectively if the general and environmental controls are robust and are being complied with.

The control environment for electronic voting incorporates the overall attitude, awareness and actions of key stakeholders regarding controls and their importance in the conduct of elections and the adequacy of documentation and procedures.

The focus of our work has been on the general control issues and our tests have focussed on key elements within the control environment and the strengths or weaknesses within these elements.

3.2 Risk Assessment

In the context of electronic voting, risk can be viewed as the threat that an event, action or failure to act will or could adversely affect the core objective i.e. the efficient conduct of the elections. Risk could also be considered as the damage to the reputation of electronic voting and an undermining of public confidence in it. Successfully delivering the core objective revolves around issues of secrecy, accuracy, confidentiality, integrity, public confidence and compliance with statutes and regulations.

The following table details some of the most relevant categories of risk appropriate to the proposed election process:

TABLE: Risk Categories

Category	Description
Personnel	Relating to the availability and retention of suitable staff
Operational	Relating to procedures employed to achieve the core objective
Information	Relating to the adequacy of information which facilitates the conduct of an election
Reputational	Relating to the public reputation of the system
Technological	Relating to the use of technology to achieve the core objective
Project	Relating to project planning and management procedures
Budgetary/Financial	Relating to the availability of resources or the allocation and prioritisation of resources

In any assessment of risk, the key requirement is to decide on how, if at all, to respond to the identified risk. The most important way of addressing the risk is to undertake a strategy of *risk reduction*. This acknowledges that it is not possible to reduce risk to zero, (i.e. total prevention) but, rather, that it can be managed and contained at a reasonable, acceptable or appropriate level. The assessment of reasonableness, acceptance or appropriateness is context specific and dependent on operating circumstances. Other possible strategies, which, in a public service sense, are less likely, include *risk avoidance* i.e. not undertaking the activity or *risk transfer* i.e. outsourcing the activity or insuring against failure.

Risk management is about making explicit what has or may be implicit in the management of operations and activities. It is not a separate exercise but should be systematically embedded in the day-to-day processes, procedures and regulations. While not prioritised or listed within the documentation, reducing the risk - and managing for a successful outcome - underpins the DEHLG approach to electronic voting.

The recommendations and proposals for changes and improvements contained in this report aim to strengthen the process and to make even more explicit the issues to be taken on board by the Commission and the DEHLG in the planned conduct of the June 2004 elections.

The focus on risk tends to emphasise the negative impact or damage that could occur. However, it is worth reflecting that, in terms of innovation, creativity and the search for better ways of doing things does require some reasonable risk taking by organisations and individuals. Ultimately, reasonableness is a judgement call and it is only after the event that the appropriateness of the decision or action can be comprehensively assessed.

There has been a good deal of public and media discussion surrounding the electronic voting proposals. We have focussed, in our review, on the factual position, as it currently is, and on the reasoned and reasonable steps that have been put in place and the further steps over the next few

weeks and months to seek to ensure success with the process. The ranking of personnel, operational, information and reputational risk above technological risk underlines the view that the human dimension i.e. the competence and capability of election staff, the adequacy and quality of training and operational instructions and the impact of the information awareness and public relation campaign, are the most critical imperatives to ensure an effective, acceptable and credible election process.

4.0 Key Issues

4.1 Postal and Special Voting

The detailed guidance in relation to the input of postal and special votes at the Local and Service Level is quite specific.

Special voting involves a special Presiding Officer bringing ballot papers for the June 2004 elections to special voters in the place where they live. The special Presiding Officer is accompanied by a Garda to ensure the same level of security as in a polling station. Help and assistance may be provided if the voter cannot vote without help. Voting must be abandoned if clear instructions cannot be given by the voter. When voting is complete, the envelope with the vote is placed in a secure ballot box and returned to the Returning Officer.

Postal voting applies to certain members of the electorate e.g. Defence Forces, Garda Síochána, Diplomats, etc. These individuals return, in the prescribed envelopes, their ballot papers with marked preferences. In terms of vote input, postal and special votes are subsequently combined.

At a local level, a voting machine prepared by the ELRO, will be provided and it is the responsibility of the LROs/Town Clerks, etc., to enter the postal and special votes in accordance with normal operations of the voting machine. The manual indicates that two staff undertake this process. On completion, the ballot module is returned to the ELRO to integrate with the other ballot modules for the “read-in” process.

However, it would appear that the guidance standard now being discussed is that three staff and not two undertake the role and, more importantly in terms of the efficient conduct of the count, that the input of votes should not begin before 8pm (1 hour before close of poll). The number of preferences made, length of paper etc., will dictate how long it takes to input a paper, but a rate of 60 – 100 per hour, could be assumed. In many of the larger urban areas, there would be several hundred such votes and with three separate papers, i.e. Local, European and Referendum, the potential to delay the count is quite significant. A possible option is the provision of multiple voting machines and additional staff to undertake the input and oversight of the process. Alternatively, the 8pm starting time could be relaxed and indeed the input could commence after the last post on the 11th June i.e. early afternoon.

At the Service Level, there is also guidance on input of these votes for the European Elections and the ELRO is responsible for input of these to a specific voting machine for that purpose. The system manual (page 33) indicates “*the ballot module should be extracted from the machine and read into the PC. You should read in all postal and special voters modules first, before the modules for the polling stations begin to arrive*”. Again, the issue of timing and delay is significant where there may be large volumes of postal and special European votes.

Whether, at Local or Service Level, agents will be present when preferences are being called out and inputted. The 8pm time is presumably to delay the discernment of trends being publicised when stations remain open until 9pm. Heretofore, these votes were integrated with all the other ballot boxes and trend predication was more difficult.

The responsibilities for the postal and special voting are summarised on the following table:

TABLE: Postal and Special Voting

Election	Conduct of Postal Voting	Conduct of Special Voting
Local Elections	LRO	ELRO
European Elections	ELRO	ELRO
Referendum	ELRO	ELRO

The implication of these responsibilities is the necessity to have a separate machine designated for these votes with responsibility for input with the LRO for Local Elections and the ELRO for all others.

In summary, clear instructions are required on the number of staff to input and oversee postal and special voting, time for “read-in” process and possibly additional resources so as to expedite the count in a timely manner. It would be unfortunate if the potential to issue speedy and detailed results which is among the key benefits of the proposed system was affected by delays with a relatively small but significant number of special or postal votes.

4.2 Recruitment and Staffing

For the wider electorate, the polling station staff will be the key interface with the new system and in many respects they are the medium through which the system will work, particularly if voter guidance and assistance is sought.

Throughout the country, the challenge for the ELRO is to ensure the availability of adequate numbers of suitable, competent and capable individuals with good interpersonal skills who are willing to undergo mandatory training and to study and internalise the new voting arrangements. The move from two to three staff in most polling stations will require the influx of new people, which can be both a strength and weakness. In terms of technology, there could be a competence issue and within each station there will be a dependence on the individual or individuals who occupies the control unit/technician role. Three people, instead of two, adds a further stage to the process that must be managed efficiently at each machine.

There is a current uncertainty, and potentially a major logistical problem due to (a) the additional training requirements (b) the perceived additional complexity and (c) the length of the day and the proposed level of remuneration, that experienced and capable individuals may not make themselves

available and, indeed, after training may deem themselves or be deemed unsuitable. For a small number of staff, such drop out could be managed but for a situation where 15,000 – 20,000 people are required, the implications could be quite significant.

Consideration in particular should be given to reviewing the proposed remuneration. Additionally, some information pack or wider campaign targeting possible recruits, incentivising appropriate and competent people and allaying anxieties of prospective polling staff could be undertaken.

4.3 Training and Support

The provision of a variety of quality training supports, manuals, checklists, presentations, briefings, hands-on sessions, booklets etc. could be another important determinant of how the poll runs on the 11th June. It should be mandatory for all staff to attend training events and these formal sessions provide the ideal opportunity to reduce anxieties or correct flawed perceptions about the electronic voting system. Individuals require time and patience to handle, examine, assemble and disassemble the voting machines, to enter data and to be completely comfortable with their obligations on the day.

The selected vehicle for training is a “Train the Trainer” concept and sessions have already occurred around the country. There is an appropriate window when the training would be most beneficial, and the adoption of the just-in-time approach is dependent on local circumstances and the levels of other training supports available. The perceived normal sessions are to be of 2 – 2 ½ hour duration and, depending on impact, this may be adequate for some people. However, it would be important to have some further options available where people could self-select whether they need to attend further sessions or indeed whether a drop-in clinic or help desk facility at key locations would be appropriate, particularly close to polling day.

It is recommended that the Instruction Manual and Operators Guide be reviewed and updated, as appropriate, in terms of content and visual presentation. In particular, a checklist to follow instructions on opening, conduct and close of poll would be a useful addition. The emphasis should be on simple instructions to be followed. The specially prepared training video is useful but a consensus of the Review Group was that it be used at the end of sessions, as distinct from the start. It is a useful tool to re-enforce the “hands-on” learning but could be perceived as somewhat challenging before the hands on sessions take place.

The following are among the issues that should be emphasised within the briefing/training for polling station staff

- Verbal assistance and explanation can be provided to voters, but under no circumstance enter the voting machine display area while a voter is present
- Control unit is not to be left unattended
- Voting permit tickets to be securely maintained
- Periodic check of face/screen of voting machine to be undertaken
- Compliance with instructions to open and close poll
- Courteous, helpful and professional behaviour

4.4 Public Relations Campaign

Our review of the system concluded that an aggressive, high quality, high impact and simple public

relations message is critical to enhance voter confidence in the system and, indeed, to maximise voter turnout, particularly for the older generation of voters who may perceive themselves as less technically competent and aware.

In raising voter awareness through all media sources, there should be greater use made of having machines set up in public buildings, libraries, post offices etc. where individual voters can get a preview of the system. As well as polling cards, each voter should receive a small calling card with key messages about the forthcoming system. Large, laminated visuals of the machines should be displayed in public buildings and around the polling stations for people to view as they approach the registration desk.

The two key learning/communication points which should be emphasised are (a) the cast vote button and (b) the vote stored screen.

It is our understanding that a PR agency has been recruited for this purpose and the key messages will be rolled out during the run up to the ballot. If the messages are unclear and the awareness raising unsuccessful; voter apathy could increase and polling station staff will have to carry a heavier load of providing information, clarification and guidance.

4.5 Ballot Reconciliation

At the “read-in” ballot modules stage, there is a key control issue, which should be prescribed for all Service Level staff. It would appear at present, to be left to local discretion. A ballot paper Verification Account/Reconciliation Statement should be prepared with the objective of agreeing the authenticated and certified printouts in the envelope, signed by the Presiding Officer, with the overall number of votes within each ballot module “read-in” for that polling station. This control check could be carried out by two staff at Service Level with a control page with columns for ballot module number/identification, votes “read-in” from ballot module, discrepancy/comment if required. This also acts as a completeness check on all opened or used ballot modules within replacement voting machines.

5.0 Guidance Memoranda

The DEHLG have produced three guidance memoranda as follows:

*Memorandum for the Guidance of Returning Officers
at the Local Elections, June 2004
Dated: November 2003*

*Memorandum for the Guidance of Constituency Returning Officers
at the European Parliament Elections, 11 June 2004
Dated: January 2004*

*Memorandum for the Guidance of European Local Returning Officers
at the European Parliament and Local Elections, 11 June 2004
Dated: December 2003*

These guidance memoranda must be read in conjunction with the IES system manuals which

explain in more detail the operations at the Local, Constituency and Service Levels. Our review of the regulations, processes and procedures incorporated a walk through the system including references to and interpretation of the guidance memoranda and the system manuals. The work also incorporated review of ancillary documentation, legislation and a review and examination of selected files at the Custom House.

A key control in any system is the provision of and compliance with a clear unambiguous chain of responsibility and accountability, which sets out detailed and comprehensive roles and requirements for the key stakeholders in the process. The existence of division and segregation of duties, supported by certified and authorised handovers within the process, also acts as a significant control at various stages of the process.

Having reviewed the documentation in advance and tested the basic assumptions and instructions and their potential to work in practice, we are satisfied that, except for the issues listed in this report, the elections for June 11, 2004 will comply with requirements of reasonableness and appropriateness, in terms of accuracy, secrecy, confidentiality, robustness and verifiability.

The flow diagrams detailed in the appendices illustrate the process which is proposed, and the control points at each level have been reviewed in terms of completeness, accuracy and validity.

6.0 Integrated Election Software System Manuals

As part of our Review, a “walk through” of the election process was undertaken. This included a review of the eight system manuals and the particular instructions within each manual. Many of the review team had “hands-on” experience of the software and had used the manuals as reference documents over the preceding months.

The following paragraphs identify, for each manual, the areas for improvement, which should be incorporated to address perceived gaps or weaknesses and to ensure that possible loose ends are identified and resolved.

(a) Introductory Manual

This is an overview manual which indicates that 180 Local Electoral Areas, 80 Town Councils, 4 European Constituencies and 28 ELROs will be involved in the June 2004 elections.

Areas for improvement

- Clarification that DEHLG will be providing blank and encrypted CDs for transfer of information.
- Agreed certificates/authorised forms to acknowledge handover of CDs from LROs, CROs to ELROs and back.
- Specification and dispatch of software to all Returning Officers and timelines for dispatch to be agreed.
- Agreed certificates/authorised forms to acknowledge contents of ballot module i.e. the ballot paper between ELRO and other returning officers.
- Immediate dispatch of CD to printer by LRO and CRO and proofs to the ELRO so that programming can commence.

- Emphasise the levels of responsibility chart on page 12 of the manual which identifies the division and segregation of duties and responsibilities. This chart is reproduced in the appendices of this report.

(b) Local Level Manual

Areas for improvement

- Emphasis on accuracy checks and the proofing and verification of the ballot paper.
- Clarification and a direction on what is to happen to the excess ballot papers produced by the printer and dispatched to the ELRO. The guidance currently suggests 50% additional print run. Directions for destruction or return to RO would be appropriate. Printed paper ballots in wider circulation would represent a security/reputational risk.
- Agreed certification/authorisation forms to acknowledge results CD from the service level.
- Clarification on the number of staff and machines and the timings for input of postal and special voting.

(c) Constituency Level Manual

Areas for improvement

- Similar issues to (b) above with emphasis on accuracy and thorough checking.
- Clarity in relation to maximum number of polls and candidates per column – the manual indicates 5 and 18 respectively. Is there a possibility that 5 columns may be inadequate if many nominations are received and need to ensure all candidates are given equal prominence?

(d) Service Level Manual

Areas for improvement

- Guidance and procedure to be set out for reconciliation of ballot paper accounts as the first stage of the “read-in” process.
- The spare modules programmed and installed in machines in case of break down or malfunction should be returned and read in, even if unused. This will serve as a completeness check and ensure all possible modules with votes are controlled, returned and stored at one location.
- Clarification on the timing and procedure for input of special and postal voting.
- Segregation of duties at ELRO and having a team of competent, proficient and capable staff is a critical control.

(e) Programming Ballot Modules Manual

Areas for improvement

- Clarification on the status of programming reading units (PRUs) and versions being utilised.
- Necessity to check the functioning of PRUs before programming or read in.
- Control procedure to ensure that all ballot modules being programmed are blank.

(f) Voting Machine – Set up

Areas for improvement

- In accordance with health, safety and welfare, there should be a clear requirement for two people to lift the machine.
- Emphasise the need to pull and tear off printer paper so as to prevent recoil or malfunction. A possible role for inspectors is to check printer paper is visible and has been pulled forward.
- Clarification on the security, return and storage of voting machines at end of poll as the backup data is included. A possible role for Presiding Officer to re-seal the voting machine to protect contents.
- In the event that the backup voting details in any machine are required, clarification of the procedure and process by which this can be accessed.

(g) Voting Machine – Operators Guide

Areas for improvement

- Clarification and agreed guidelines on what type of guidance and instruction can be provided to voters on the use of the machine.
- Procedure explained to de-activate and re-activate machine if wrong colour button is pressed on the Control Unit.
- Possibility to improve and make instructions more user friendly, including use of colour screens and walk through checklists to set up and close machines.
- An agreed procedure to tear, perforate, tag and store coloured permit tickets at the Control Unit to prevent possible recycling of votes.
- Arrangements for “just in time” training and other training supports to be available.

(h) Read in Ballot Module Manual

Areas for improvement

- Agreed ballot paper verification or reconciliation process to be set out and explained within this manual.
- Clarification of the process by which backup voting details on a machine can be read in before commencement of count stage, if required.

(i) Miscellaneous Items

Areas for improvement

- Process and procedure to collate and return IES registration forms for the correct version of the software to a central location.
- The postal and special voting input procedures and the probability of slowing down the count process unless additional machines and/or staffing are available or timelines are changed. In a situation of additional resources to input these votes from 8pm, there may be a constraint imposed by the number of machines available.

In conclusion, the majority of the areas for improvement represent small administrative and operational changes which can be incorporated with relatively little difficulty.

Other issues were discussed in more detail in Section 4.

7.0 Miscellaneous

7.1 Logistics

It would be anticipated that queues will develop particularly in the evening and in the run up to close of poll. While the norm will be for three ballot papers to be in view at each voting machine, there will be many instances where four ballot papers will be in place. This will occur at polling stations near large urban areas or towns where voters may be casting votes in respect of two local elections, i.e. Town Council and County Council, European Parliament and the Referendum. To alleviate congestion and to expedite voter throughput, a couple of alternatives should be considered.

Firstly, within the national publicity and PR campaign, voters should be encouraged to vote early and all related literature should emphasise this message. Within the polling station, there should be clear instructions, provided both visually and verbally, on what voters are required to do. Secondly, in situations of severe delays, the Presiding Officer may be required to intervene and to verbally check on individual voters' progress. An agreed protocol for this intervention should be considered to save potential embarrassment and also to maintain integrity of the polling station.

7.2 General

Garda Síochána Involvement

The introduction of electronic voting, while not impacting greatly or changing the involvement of the Gardaí, has some security implications. In particular, the storage and security of expensive voting machines and the arrangements for dispatch by ELROs to polling stations, and the return to secure premises after close of poll, needs careful consideration.

Local circumstances prevail within each area and effective working arrangements have been instituted over the years. However, the new demands will require a policy statement by Garda management, to support the local decision-making on a county or geographic basis.

Simulated Elections

In addition to simulated elections and other routines undertaken by the DEHLG, a number of Returning Officers have undertaken their own independent simulations for their electoral areas. This included parallel running of manual and electronic counts and the results have been satisfactory.

Key Elements of the Roles

RO at Local Elections (Local Level)	<ul style="list-style-type: none"> • Publication of notices and receipt of nominations • Supply materials to ELRO including ballot papers, CD
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	<ul style="list-style-type: none"> • with ballot paper data, etc. • Special voter documentation • Polling card issue • Ballot box for and input of special and postal voting • Conduct of count and results declaration
CRO at the European Parliament Elections	<ul style="list-style-type: none"> • Publication of notices and receipts of nominations • Supply materials to ELRO including ballot papers, etc. • Conduct of count and results declaration
ELROs at the European Parliament and Local Elections	<ul style="list-style-type: none"> • Responsible for voting for all elections (except postal voting at local elections) • Publication of notices e.g. disability access • Preparation and provision of voting machines • Appointment of staff • Transfer of data to CRO and RO • All aspects of inspection and supervision of poll

Presiding Officer

The Presiding Officer should be required to use two envelopes at the close of poll;

- Envelope to contain signed statements from both opening and closing of poll and the ballot module. This should be sealed for dispatch and return to the count centre.
- Envelope to contain counterfoils of coloured permit tickets, marked copy of register, other authorisations (agents, disabled voters etc.), unused stationery, etc. which should be sealed also for return to count centre. The counterfoils, for example, may need to be referred to, in case of discrepancies or to clarify the voting details at a polling station.

Voting Machine

At the end of the poll, it is recommended that the Presiding Officer seal the voting machine, which has a back up copy of the vote details, and to ensure that it is securely stored in readiness for return to a central location/warehouse.

8.0 Main Findings and Recommendations

The following section outlines the main findings and recommendations from our review:

Finding 1: The sourcing, recruitment, training and retention of competent, proficient and capable polling station staff is a significant challenge facing the ELROs.

Recommendation 1: Serious consideration should be given to the levels of remuneration

envisaged for what will be a 15-16 hour day coupled with the necessity to attend dedicated training events.

Finding 2: The quality and effectiveness of the training programmes and sessions for 15,000 – 20,000 staff throughout the country will be a key determinant of how successful the electronic voting arrangements will be in practice.

Recommendation 2: Consideration be given to production of further training supports and aids, colour slides, checklists, documentation. The provision of drop-in clinics or test machines should be pursued.

Finding 3: The system manuals and other guidance memoranda should be updated and additional pages circulated to address perceived gaps and weaknesses in current documentation highlighted in this report.

Recommendation 3: The detailed comments in Section 6.0 can be used to update the relevant sections. Greater use of templates and checklists should be considered and should be incorporated in the Guidance for Presiding Officers Manual, currently being finalised.

Finding 4: The success of Electronic Voting and the challenge to adequately explain it, and thereby engender public confidence and enthusiasm, is a particular challenge to be addressed in the PR and publicity campaign

Recommendation 4: A comprehensive, targeted and high quality TV, media, poster and postal campaign should be undertaken at the appropriate juncture in the run up to the 11th June.

Finding 5: As a result of the necessary facilitation of postal and special voting arrangements, there is a distinct potential to slow down the overall count process and delay the “reading in” of ballot modules.

Recommendation 5: To expedite the count as soon as is practicable after 9pm either additional resources - voting machines and staff - should be made available at 8pm or alternatively the current timeline be relaxed so that input can commence in the late afternoon of election day.

Finding 6: This is the first time that electronic voting will be used in every polling station and, for the majority of the Irish electorate, it is the first real exposure they will have to the new arrangements. The fact that there will be three and possibly four ballot papers on each voting machine could make the voting process somewhat more confusing and complicated

Recommendation 6: The potential for greater confusion and the possible difficulty with voters accurately reflecting their preferences, underlines the absolute importance of having available at each station appropriate guidance and assistance. Additionally the public relations and information has a key role to play in raising awareness of what will confront voters at each polling station

Finding 7: The most prevalent risks factors cited for the June 2004 elections are personnel, operational, information and reputational.

Recommendation 7: The recommendations and other issues highlighted in this review can, if implemented, reduce these risks very significantly.

In summary, the system is a modern and innovative enhancement that can, in our assessment, command confidence. It will be secure if the guidelines and procedures are complied with. It is more transparent, in several respects, than the older manual system used heretofore. However, it requires more advanced planning and testing initiatives than previous systems. It can be successfully administered, assuming the right election staff can be recruited, appropriately trained and deployed at polling stations and at other levels.

9.0 Concluding Remarks

The Institute of Public Administration was pleased to be invited to carry out this review of the electronic voting system. Our work focussed on general and environmental controls and on the documentation and procedures for the June 2004 elections

We would like to accord our appreciation to the inter-disciplinary group of IPA Specialists and the external expert practitioners, who provided unique insights and perspectives on a wide variety of pertinent issues. Notwithstanding this latter contribution, responsibility for the report findings and the recommendations made rests entirely with the Institute.

Finally, we would like to thank both the Commission and its secretarial and administrative support for their efficient help and co-operation at various stages in our review and also the DEHLG for making available all the system information, files and documentation we required.

We are available to contribute to the Commission's work and to provide further support, if deemed appropriate.

Appendices

Designated Levels of Responsibility

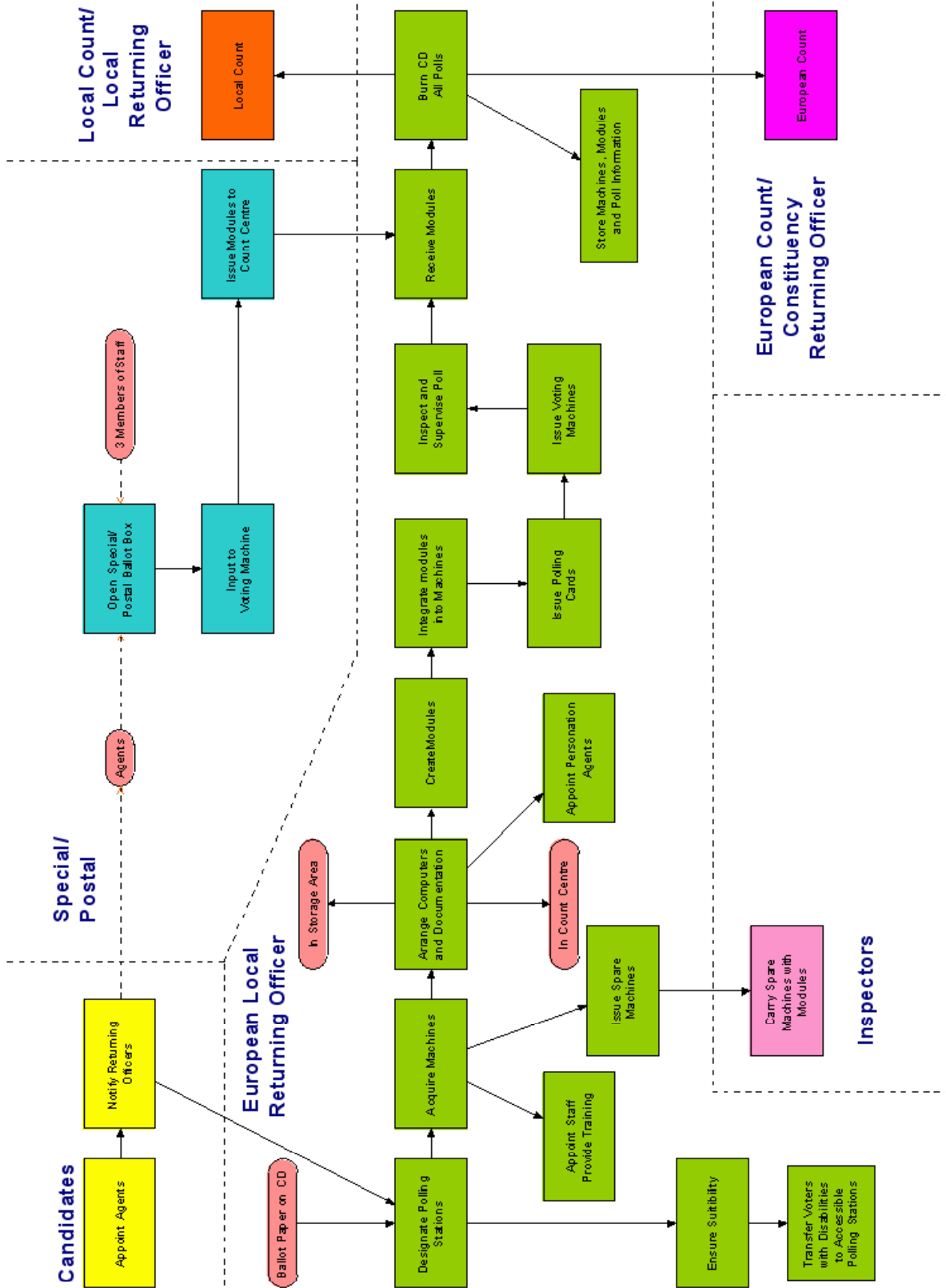
(reflecting the segregation of duties within the process)

Responsibility	LA Official	Town Clerk	E.L.R.O.	C.R.O.
Specific Level	Local	Local	Service	Constituency
Poll	LEA (County and City)	Town Council	European and Local	European Parliament
Install IES				
Input & check basic data for polls				
Input/Select polling stations				
Receive nominations				
Input candidate data				
Prepare ballot papers				
Deliver data files				
Prepare Voting Machines				
Conduct poll				
Input postal and special voters ballots				
Reconciliation of ballot paper accounts				
Read in ballot modules				
Prepare and send data files				
Conduct counts				
Announce results				

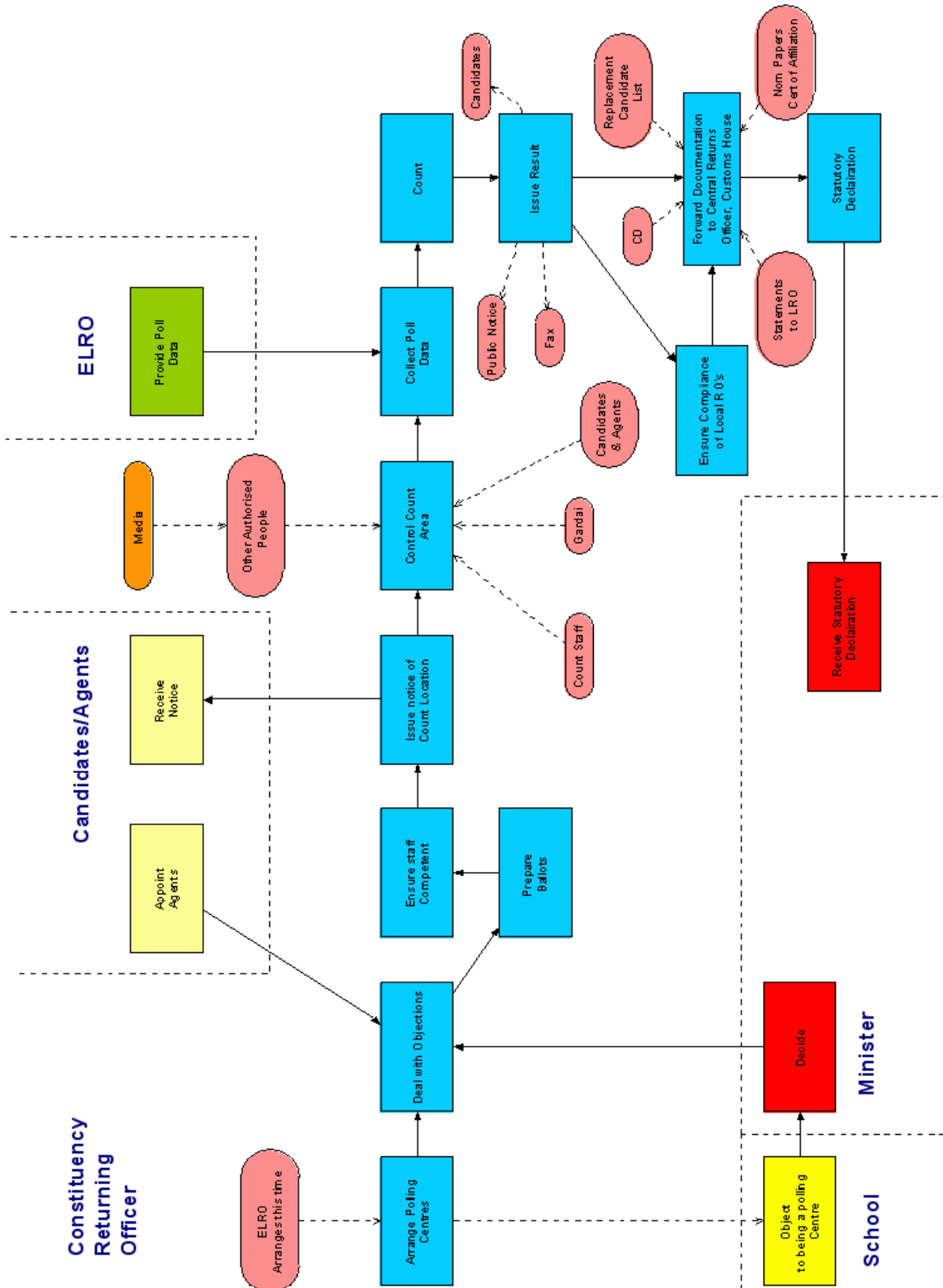
Source: Election system manuals

The proposed referendum will add further responsibilities and possibly an additional column, for National Returning Officer level, to this table.

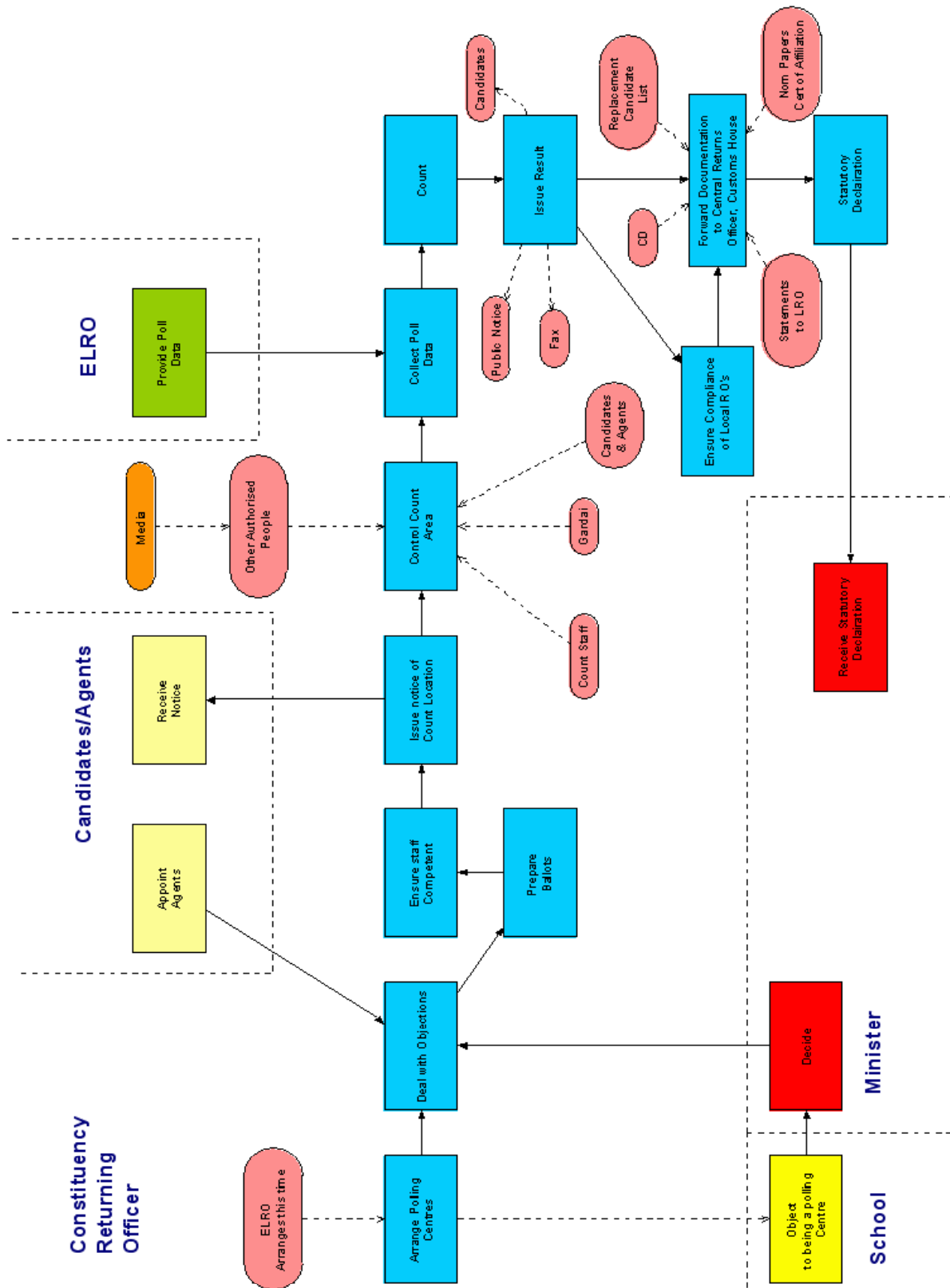
Outline Flowchart – European Local Returning Officer



Outline Flowchart – Local Returning Officer



Outline Flowchart – Constituency Returning Officer



Outline Flowchart – Postal/Special Votes

