

Committee(s): Policy and Resources Committee – For Decision	Dated: 23/02/2023
Subject: Introducing Electronic Voting	Public
Which outcomes in the City Corporation's Corporate Plan does this proposal aim to impact directly?	9, 12
Does this proposal require extra revenue and/or capital spending?	Y
If so, how much?	£10,000
What is the source of Funding?	Contingency Budget
Has this Funding Source been agreed with the Chamberlain's Department?	Y
Report of: Bob Roberts, Deputy Town Clerk	For Decision
Report author: David Mendoza-Wolfson, Office of the Policy Chairman	

Summary

Court of Common Council on 8th December 2022 passed the following motion:

“That this Honourable Court instructs the Policy and Resources Committee to investigate the viability of introducing an electronic voting system, capable of recording individual votes, that would replace the current voting procedure as laid out in paragraph 4 of Standing Order No.14 — and to return to Court no later than April 2023 with its recommendations.”

This report sets out the pros and cons of the main electronic voting (e-voting) products on the market and makes a recommendation for the purchase of the preferred system. Further, it makes a recommendation for the replacement of the current voting system used for Divisions — as set out in the Court of Common Council's Standing Orders.

Recommendation(s)

Members of the Policy and Resources Committee are asked to:

- Recommend to Court the purchase of the e-voting system produced by Meridia Interactive Solutions (option 3 below).
- Recommend to Court the alteration of Standing Order 14 as set out in Annex 1.
- Recommend to Court the use of e-voting at Court of Common Council, to be operational from its May 2023 meeting.
- Approve a spend of up to £10,000 in funding from your Committee's 2022/23 Contingency Fund to support the purchase of a system and necessary additional paraphernalia.

Main Report

Background

1. On the 8th December 2022, the Court of Common Council resolved “That this Honourable Court instructs the Policy and Resources Committee to investigate

the viability of introducing an electronic voting system, capable of recording individual votes, that would replace the current voting procedure as laid out in paragraph 4 of Standing Order No.14 — and to return to Court no later than April 2023 with its recommendations”.

Current Position

Following the resolution at the December Court, officers have researched various electronic voting systems, to identify one most appropriate for the City Corporation.

Options

2. Many governing bodies, in the UK and around the world, such as the Scottish Parliament and New Hampshire House of Representatives, have adopted electronic voting systems in various guises. There are three main types of system:

Option One: Fixed Unit

3. This is a wired, permanently fixed system which is part of an integrated audio-visual set up. This would not be appropriate as the multi-use nature of the Great Hall precludes the Corporation from fixing tables in place.

Option 2: Software Only Solution

4. These systems require the installation of software onto already-owned devices such as laptops and tablets. This would require Members to bring in their devices — either tablets or laptops — and ensure those devices retain their power. This could result in officers having to troubleshoot potential issues over a variety of devices.
5. This option has a low installation fee, but high annual license cost compared to other options. An identified software-only solution, produced by OpenMeeting would cost around £5,070 (\$6250USD) to install, with an annual licensing cost of around £2,840 (\$3500USD).
6. This option is not recommended due to the problems that could arise from the absence of physical clickers.

Option 3: Portable Hardware.

7. These systems are comprised of portable electronic devices (clickers) for making votes, and software that needs installing on one device to collate and display these votes.
8. This option has low purchase and support costs. The identified system under this option, produced by Meridia, would cost around £6,020 (\$7,415USD) to purchase; annual support costs, an optional addition, are around £400 (\$495USD). This option is recommended.

Proposal

9. The system that the Corporation will seek to purchase if the committee approves the recommended option, 3, is the Meridia ARS system.
10. The Meridia system uses a radio receiver that connects with portable electronic voting devices (clickers). The devices' use of radio frequency means that the system does not require an internet connection to be operable. The clickers have a green 'Yes' button, a red 'No' button and a yellow 'Abs' button. Once a button has been clicked, it is immediately communicated to the receiver; Members will have the option to change their vote by clicking another button until voting on an item has closed.
11. Meridia's software allows for visual vote confirmation, which will allow Members in the room to review and confirm the votes cast once voting is closed. This will require screens to be present during Court meetings.
12. This option is being recommended over option 2 due to the inclusion of physical clickers. While systems such as OpenMeeting have proprietary software and the ability to show immediate results of votes, they rely on the use of personal devices. This means that the system cannot be used offline and is likely to have more user-errors than a standalone system, as it would be run on differing personal device models.
13. While the specific Court instruction was to explore the introduction of e-voting to support Divisions, it would be pragmatic to also consider its broader extension to all voting matters should the technology prove efficient and easy-to-use. We will, therefore, keep the matter under review.
14. In the interim, further to the Court's direct instruction, it is proposed that the electronic voting system be tested in training sessions with Members through March and April and, subject to satisfactory performance, a proposal to amend Standing Order 14 (as per Appendix 1) then be taken to the Court at its 27 April meeting. Should the Court approve its adoption, e-voting for Divisions would then take effect as of the May Court.

Corporate & Strategic Implications

Financial and resourcing implications

If option 3 is selected, the price of the system for 140 clicker keypads, along with the Meridia receiver, software and 12-months support and training would be around £6,020 (\$7,415USD).

The Corporation might also wish to buy new screens to display the votes around the room during Court meetings, and these are not included in the above price. While the devices come with 12 months of support from Meridia, if the Corporation wished to continue receiving support, then there is an extra cost of around £400 (\$495USD) per annum.

It is proposed that funding of £10,000 is drawn from the 2022/23 Policy and Resources Contingency Fund and charged to City's Cash to support this. The current uncommitted 2022/23 Contingency Fund balance is £347,189 prior to any allocations being made for any other proposals on today's agenda.

Legal Implications

None

Risk Implications

None

Equalities Implications

While the current Division model requires Members to walk and stand, potentially for some time, the introduction of electronic voting will mean that recorded votes can take place without the need for Members to move – better supporting those with mobility issues.

The recommended option in this proposal would include voting clickers with braille on the Yes, No and Abstain buttons; this will further improve the accessibility for those who are visually impaired.

Climate Implications

None

Security Implications

Meridia have a Wireless Assurance & Security Protocol (Appendix 2)

Conclusion

15. Following the Court of Common Council's instruction to the Policy and Resources Committee to investigate the "viability of introducing an electronic voting system" and having investigated various electronic voting systems, option 3 – the Meridia ARS system is recommended to the Court of Common Council for adoption at future meetings. This system, which includes physical hardware and can be used offline, is cost-effective, secure, and portable.

Appendices

Appendix 1 — Proposed Amendment to Standing Order 14

Appendix 2 — The Meridia system's Wireless Assurance & Security Protocol

David Mendoza-Wolfson

Policy Advisor

Town Clerk's Department

E: david.mendoza-wolfson@cityoflondon.gov.uk

Appendix 1 — Proposed Amendment to Standing Order 14

In order to allow electronic voting to be used in place of the current Division system at the Court of Common Council, it is necessary to amend Standing Order 14.

Standing Order 14 should be amended to read:

14. Divisions

1. A Member demanding a Division must stand for that purpose (if able to do so). A Division will not be allowed unless another 11 Members (i.e., 12 in total) stand in their places (if able to do so) to support the demand.
2. If a Division is allowed, the Lord Mayor should instruct the Town Clerk to input the question into the electronic voting software.
3. The Town Clerk will repeat the Motion and every Member then present and wishing to vote will cast their vote either for the affirmative or the negative, using the electronic voting device provided (the Lord Mayor having the right to a second, casting vote). An option on the device will also allow Members to abstain, should they wish.
4. Once every Member has placed their vote, polling will close and the result will appear immediately, on a screen visible to all Members.
5. Members will have an opportunity to scrutinise the votes and will stand if they wish to contest the vote recorded in their name.
6. The Town Clerk will then declare the result.
7. If it appears to the Lord Mayor that the electronic voting system cannot be used for any reason a vote should be taken through the following non-electronic mechanism:
 - (a) The Lord Mayor will ensure that two Tellers for the affirmative and two for the negative are appointed. If there are insufficient Members of the Court willing to act as Tellers, no Division will take place.
 - (b) If a Division is allowed, the Town Clerk will ring the Division bell and at the expiration of three minutes they will ascertain whether a Division is still demanded. If so, the Bar of the Court will be closed after which no Member may enter or leave the Court except for the purpose of recording their vote until the Division has been declared closed.
 - (c) The Town Clerk will repeat the Motion and every Member then present and wishing to vote will cast their vote either for the affirmative or the negative (the Lord Mayor voting without leaving the Chair and having the

right to a second, casting vote).

The Ayes for the question will go through the Bar of the Court to the right of the Lord Mayor and the Noes through the Bar to the left, the votes being recorded at the respective exits.

(d) Members wishing to abstain should remain seated and the Lord Mayor will seek confirmation of their intention before accepting a declaration from the Tellers that every Member wishing to vote has done so, after which the Bar of the Court will be re-opened and Members will return to their seats through the central entrance.

(e) The Town Clerk will call for the Tellers' reports and declare the result.

Appendix 2 — The Meridia system's Wireless Assurance & Security Protocol

The Meridia system's Wireless Assurance & Security Protocol reads:

- 1. Meridia wireless communication protocol uses analogue Signal Layer Modulation (SLM) mode with alternating frequency offset parameters. SLM ensures that even if someone is in possession of the same radio chips, the signal cannot be reproduced and acknowledged if the parameters are incorrect.*
- 2. Each chip uses unique parameters, such as the length of synchronization header, the length of address code, whether to add FEC error correction mode, or add validation bytes, or whether to add Manchester code.*
- 3. Communication parameters are set during the manufacturing process and cannot be modified afterwards.*
- 4. One of many parameters we use – the Length of Address Code - has 65,536 variations, which is multiplied by the number of combinations of the remaining signal modulation variables.*
- 5. Each of the parameter changes is a form of encryption, since these measures reduce the possibility of the intercepted signal being interpreted and maliciously modified.*
- 6. This complex proprietary protocol and signal integrity check (CRC) in all our keypads and receivers increases the difficulty of interpreting and forging signals.*
- 7. Finally, the short distance wireless communication also reduces the probability of signal capture, as the hacker would have to be in the vicinity of the room where the receiver is located.*