Context Description: Posted Dec. 1, 2006

This draft report was prepared by NIST staff at the request of the Technical Guidelines Development Committee (TGDC) to serve as a point of discussion at the Dec. 4-5 meeting of the TGDC. Prepared in conjunction with members of a TGDC subcommittee, the report is a discussion draft and does not represent a consensus view or recommendation from either NIST or the TGDC. It reflects the conclusions of NIST research staff for purposes of discussion. The TGDC is an advisory group to the Election Assistance Commission, which produces voluntary voting system guidelines and was established by the Help America Vote Act. NIST serves as a technical advisor to the TGDC.

The NIST research and the draft report's conclusions are based on interviews and discussions with election officials, voting system vendors, computer scientists, and other experts in the field, as well as a literature search and the technical expertise of its authors. It is intended to help in developing guidelines for the next generation of electronic voting machine to ensure that these systems are as reliable, accurate, and secure as possible. Issues of certification or decertification of voting systems currently in place are outside the scope of this document and of the TGDC's deliberations.

Alternative Language Issues

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1. Introduction

The National Voting Rights Act (NVRA) mandates that when the primary language of a certain number of voters within a district is not English, ballots in that language must be available to them. In this paper we discuss how this basic NVRA requirement interacts with the VVSG.

It is important to distinguish between *procedural* and *equipment* requirements:

- **Procedural requirements** dictate how an election is administered. Such matters as the number of voting stations required and polling place setup and accessibility are addressed. Note that such requirements are out of scope for the VVSG. Also note that "testing" against procedural requirements would imply inspecting every single polling place, since one cannot infer the conformance of one place from another.
- **Equipment requirements**, embodied by the VVSG, dictate certain features of voting equipment. The basic idea is that the equipment must be *capable* of supporting a valid election if used correctly. Testing against equipment

requirements entails the examination of a unit within a laboratory setting. Note that it is all machines *of this type (model)* that are declared as conforming or not, not just the particular machine tested.

Clearly, the NVRA is a procedural requirement. The question then is what sort of equipment requirement is appropriate to support the NVRA.

2. History and Current Status

2.1 How is Each Alternative Language to be Supported?

Early drafts of the VVSG had a number of requirements describing what was involved in the support of an alternative language. For two examples, it was required 1) that ballots in an alternative language contain information equivalent to that in the corresponding English ballot, and 2) that vendors perform usability testing on the alternative language system. These were dropped from the final version of the VVSG and so it is now somewhat unclear just what support for such languages entails.

2.2 Which Alternative Languages Must Be Supported?

The current status is somewhat unclear. The VVSG says:
3.1.3 Alternative Languages
The voting equipment shall be capable of presenting the ballot, ballot selections, review screens and instructions in any language required by state or federal law.
(The wording is very similar to the corresponding clause of the VSS'02.) This wording is ambiguous. If interpreted as an *equipment* requirement, this would appear to require *every* model of voting system to support *all* the languages covered by law: Spanish, Korean, Navajo, etc. Note that the latter has no written form and is therefore an oral language only. Thus, as part of conformance testing, every system would be examined for its ability to support all legally covered languages.

However, in an exchange of e-mail with NIST staff seeking clarification, EAC staff said that the intention was that when systems are tested, the vendor (presumably in the Technical Data Package) would declare which languages the equipment was capable of supporting, and that the tests would be for these languages only.

3. Two Approaches for Required Set of Languages

So, there seem to be two approaches on the table for support of alternative languages:

3.1 Every certified model supports every language.

Pro:

- Gives wide choice of equipment to states and counties with high-end alternative language needs

- Spreads out the cost of "exotic" language support among buyers

Con:

- Every vendor incurs the expense of supporting all languages, even if, e.g. marketing only to the Midwest, where alternative language needs are lower.
- If a new language hits the NVRA threshold in even a single district, then that language gets incorporated into the VVSG.
- How would support for oral languages work for paper-based systems, such as optical scanners?
- Even if oral language requirements are limited to DREs, this still implies that all DREs must have audio - a feature not elsewhere required in the VVSG.
- Every system would require an expensive test procedure.

3.2 Every certified model supports only a list of declared languages.

Pro:

- Gives vendors freedom to support only those languages for which they anticipate a market.
- Vendors avoid the expense of implementing unneeded (unmarketed) features, and prices are lowered accordingly.

Con:

- States and counties with high-end alternative language needs must rely on market pressure alone to meet those needs;
- Such jurisdictions directly bear the cost of supporting "exotic" languages.
- May give a vendor monopoly power over the price.

4. Conclusions

RECOMMENDATION: with respect to issue 2.1, the VVSG should specify in more detail which features are required for the support of any alternative language.

RECOMMENDATION: with respect to issue 2.2, the VVSG should clarify which of the two approaches above (3.1 or 3.2) is intended.

Substantively, the issue of whether to mandate support for all languages is more difficult. From an economic perspective, it makes more sense to allow some vendors to specialize in difficult languages (and charge accordingly) and let others limit themselves to a simpler customer base. This way, the total cost of implementation is reduced (Total cost = cost per model times #models; thus fewer models leads to lower cost).

Set against this is the improved bargaining position of a few vendors. If a jurisdiction needs a system that supports Tagalog and only two vendors have such a system, the jurisdiction has a weak negotiating position.

RECOMMENDATION: The VVSG should specify the second approach (3.2). However, if the EAC decides to use the first approach, it should make an exception for paper-based systems and non-audio DREs with respect to oral languages.