NYS BOARD OF ELECTIONS DECISION CONCERNING REQUEST FOR INTERPRETATION

Requestor(s)	SysTest Labs Inc.

Request Date	Received by SBOE 2/26/09 (Submitted by James Henry)

NYS Election Law, Guideline, or Other Issue to be Clarified	VVSG Vol. 1, Section 5.2.3a {*Software Modularity and Programming*} VVSG Vol. II, Section 5.4.2 {*Assessment of Coding Conventions*} Section 6209.2 G

Proposed Interpretation	2 Options Proposed have been proposed: Option 1: 6209.2 should be interpreted to mean any software code delivered prior to compilation shall be "production-level code." Option 2: Interpret 6209.2 as meaning "production compilation" for Trusted Build is the "submitted voting system's software as delivered."
NYSBOE Response Date	3/6/09
Conclusion	In an independent analysis of compiler flag settings by SysTest prompted by NYSTEC questions on compiler switches, an execution trace for a given compiled module (i.e. cfload) was followed from initiation to compilation to determine if a security patch was bypassed. The result was that the flags for cfload were all set correctly and the security patch was not bypassed. The more significant finding was that through the manipulation of compiler switches in nested makefiles, the end result of the compiled code *could* be impacted, and that compiled binaries could be produced that did not exactly reflect what

	was provided in the source code through compiler switch manipulation. The current VVSG and NYSBOE requirements (NY Laws, 6209 and BMD) do not require the settings for compile flags to be set as "release-level". They do not specifically prohibit "conditionally compiled" or "unused code. They do not specify that all compiler flags must be traced from initiation to final compiled binaries to validate all make files and build files compile the source code exactly as reviewed. This is identified as an ambiguity by SysTest.
NYSBOE Response	Option 2 is the preferred interpretation of the requirements. However, testing should ensure that the source code review uncover any and all conditionally compiled code. Because the recommendation will greatly increase the amount of time spent by the ITA to properly test source code that contains large amounts of conditionally compiled code, it is recommended that vendors strive to submit code that limits conditionally compiled code. This is a best practice for voting systems, and will result in decreased test costs for voting system vendors. Therefore, it is strongly recommended. Note: see companion reference for this RFI response, ***"NYSTEC Response to SysTest Request for Interpretation of VVSG I Requirement 5.2.3a, VVSG Vol. II 5.4.2 & NYS 6209 Requirements Related to Conditionally Compiled Code."***