U.S. International Trade Commission

Audit of Software Licensing

OIG-AR-12-10

August 16, 2012

Office of Inspector General

The U.S. International Trade Commission is an independent, nonpartisan, quasi-judicial federal agency that provides trade expertise to both the legislative and executive branches of government, determines the impact of imports on U.S. industries, and directs actions against certain unfair trade practices, such as patent, trademark, and copyright infringement. USITC analysts and economists investigate and publish reports on U.S. industries and the global trends that affect them. The agency also maintains and publishes the Harmonized Tariff Schedule of the United States.

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UNITED STATES INTERNATIONAL TRADE COMMISSION

OFFICE OF INSPECTOR GENERAL

WASHINGTON, DC 20436

August 16, 2012 OIG-KK-011

Chairman Williamson:

This memorandum transmits the Office of Inspector General's final report, *Audit of Software Licensing*, OIG-AR-12-10. In finalizing this report, we analyzed management's comments to our draft report and have included those comments in their entirety as Appendix A.

This audit focused on whether the Commission is paying for all installed software. We collected and analyzed information describing the software installed on the network, and compared this to the Commission's proof of licensing for these products.

This report contains six recommendations for corrective action. In the next 30 days, please provide me with your management decisions describing the specific actions that you will take to implement each recommendation.

Thank you for the courtesies extended to the auditor during this evaluation.

Philip M. Heneghan
Inspector General

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Results of Audit

The purpose of this audit was to answer the question:

Is the Commission paying for all installed software?

No. The Commission was not paying for all installed software.

The Commission did not have a complete record of all software installed on its network and was unaware of the licensing terms for some software that it had deliberately installed. As a result the Commission could not ensure that it had paid for all installed software.

The Commission had proof of licensing for software products from 18 vendors. We compared those to paid, commercial software applications from over 140 vendors we found on the network. The problem we identified was that the Commission did not know the software licensing obligations for all applications installed on its network. Before software is installed on the network the license agreements should be understood and approved.

Until the Commission knows the software licensing obligations for applications installed on its network, it cannot ensure that it is paying for all installed software.

Problem Area

Problem Area:
The Commission did not know the software licensing obligations for all applications installed on its network.

The Commission did not know the software licensing obligations for all applications installed on its network.

The Commission uses software that is licensed in different ways:

- Free software (freeware): this software is freely downloadable and usable by anyone, for any reason, at no cost;
- Shareware: this software is freely downloadable, but the terms of its license define whether fees must be paid depending on its use; and

- Commercial, paid software: this software is not typically available for download without payment, and the terms of its licenses describe how it may be used, and the fees associated with its use.

We compared the license terms for a sampling of software installed on the network with the Commission's documentation for its purchased software licenses. We found that the Commission did not comply with the license terms for some of its installed software. Based on interviews with CIO staff, it appears that the Commission did not fully understand the licensing terms of some installed software.

Our audit of installed software found at least one instance of "cracked" software. Software described as cracked indicates that someone has modified the original code of the software to bypass or remove copy protections to allow the use of the software without paying for it. Software that has been tampered with in this way has also been found to have been modified for nefarious purposes, including the compromise of networks and theft of data. For security reasons, cracked software should never be allowed to be installed on a Federal Government network. Cracked software is typically used when someone wants to use commercial software but does not want to pay for it. It is unclear why the software was installed on the network.

The Commission did not prevent or detect the installation of the cracked software, and was unable to identify when it was installed, or by whom. This combination of events places the Commission at risk of violating license agreements, and subjects the Commission's network systems to additional risk.

For the last several years, when it detected a virus on a Commission workstation, the Help Desk installed software that performed detection and eradication of malware. This software was licensed as shareware. The terms of the shareware license indicated that it could be used without payment for personal use, but it required payment if used as part of a commercial support or help desk function. In this case, the Commission used the software for free, when in fact it should have paid for each installation. Had the Commission understood the licensing terms, it could have either budgeted for its use or pursued alternative means of identifying and eradicating malware.

The Commission also uses a wide range of paid commercial software to perform its work. This includes operating systems, office suites, client application software, and enterprise database software. All of this software requires paid licenses, and each of these licenses has different requirements. Software can be licensed per user, per device (workstations, servers, smart-phones, etc.), per site, or per organization.

In one instance, the Commission used a graphical software application that was distributed to 318 workstations. The Commission believed that it owned a site license, meaning that for a fixed fee, any and all Commission network users could use the software in compliance with its licensing. We contacted the vendor of this software, and

were told that the license is for a maximum of 100 users, and no more. Because the Commission did not understand the terms of its license, it was potentially in violation of its agreement.

In many other instances, we found installations of paid software for which no records of a purchased license could be located. The Commission needs to verify the terms of its current licenses and track the licenses so they can be reconciled with current use.

Complex, expensive software can typically be expected to have complex licensing agreements. If these licensing agreements are not clearly understood, decisions may be made to use software without regard to cost, which leads to one of two scenarios: (1) if properly licensed, a tremendous amount of money can be spent to achieve something of minimal value to the organization; or (2) the organization is either unaware of or ignores the fact that it is in violation of its software licensing agreements.

During this audit we identified an expensive software package installed on more servers than the Commission had licenses for. Because this software employs a complex licensing scheme, the Commission did not understand its payment obligation. The CIO had identified this problem and had begun correcting the situation prior to the start of this audit.

The Commission uses software with a range of licensing terms, ranging from simple and free to complex and expensive. It has a responsibility to comply with all licenses of the software it uses.

Recommendation 1: Require and retain proof of proper licensing before the installation of software.

Recommendation 2: Centralize records of licensing details for reconciliation purposes, including the terms of the license for efficient review.

Recommendation 3: Add technical controls to prevent the installation of software by users.

Recommendation 4: Implement technical monitoring to detect the installation of software, including details on when it was installed and by whom.

Recommendation 5: Validate terms of current licenses.

Recommendation 6: Remove software that is unlicensed.

Management Comments and Our Analysis

On August 9, 2012, Chairman Irving Williamson provided management comments on the draft audit report. The Chairman agreed with our assessment that there is a problem area in that the Commission did not know the software licensing obligations for all applications installed on its network, and that the Commission will implement the recommendations detailed to insure that the Commission complies with all licensing obligations installed on its network. The Chairman's response is provided in its entirety as Appendix A.

Objective, Scope, and Methodology

Objective:

Is the Commission paying for all installed software?

Scope:

The scope of this audit included all production servers and workstations in use at the USITC as of February 5, 2012.

Methodology:

1. Use existing CIO tools (SCCM) to identify all software installed on the ITCNet Active Directory domain.
2. Through inspection, identify all software installed on systems not on the ITCNet Active Directory domain.
3. Obtain all licensing agreements for purchased software and reconcile against list of installed software.
4. Identify any differences between installed and purchased software.

We conducted this performance audit in accordance with Generally Accepted Government Auditing Standards (GAGAS). Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Appendix A: Management Comments on Draft Report

Chairman

UNITED STATES INTERNATIONAL TRADE COMMISSION

WASHINGTON, DC 20436

CO81-KK-006

August 9, 2012

MEMORANDUM

TO: Philip M. Heneghan, Inspector General

FROM: Irving A. Williamson, Chairman

SUBJECT: Management Response to the Inspector General's Draft Report, "Audit of Software Licensing"

I am in receipt of the Inspector General's draft report, *Audit of Software Licensing*, dated July 3, 2012. I appreciate the opportunity to review the draft report and to provide comments, especially in light of the importance the Commission places on the protection of intellectual property.

The Inspector General's draft report found that the Commission could not ensure that it is paying for all its installed software, as it did not have a complete record of all software installed on its network and was unaware of the licensing terms for some software that it had deliberately installed. The report identified one specific problem area, noting that the Commission did not know the software licensing obligations for all applications installed on its network.

We agree with the findings, and the Commission will institute management decisions to rectify this situation in a timely manner. Thank you for reviewing the Commission's software licensing practices and for making your recommendations.

"Thacher's Calculating Instrument" developed by Edwin Thacher in the late 1870's. It is a cylindrical, rotating slide rule able to perform complex mathematical calculations involving roots and powers quickly. The instrument was used by architects, engineers, and actuaries as a measuring device.

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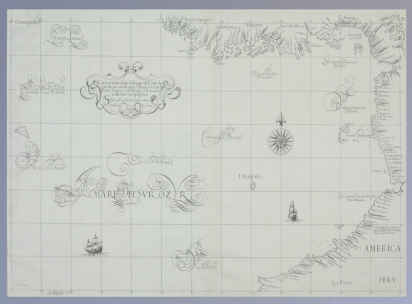

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