



## Report of Independent Accountants

To the Management and Board of Directors of Quova, Inc:

We have examined management's assertion, included in the accompanying Management's Statement on the Effectiveness of Internal Control that:

- internal control over the geolocation application and related processes was designed and operating effectively and management has maintained internal control over those aspects of the geolocation application and related processes that support the complete and accurate processing and reporting of information as of December 31, 2010 based on the Control Objectives and Related Criteria described 1 through 5.
- application and operational controls provided reasonable assurance (based on the Control Objectives and Related Criteria described in 1 through 5) that the procedures used to calculate Coverage metrics are completely and accurately applied as of December 31, 2010 based on the Control Objectives and Related Criteria described in 6. The usage data used in the calculation of the Coverage metrics are taken from the most recent annual calculation period (June 1 to June 30 2010). The usage data represents the aggregation of the web traffic of Quova's customers that participated in the Closed-Loop program during this period. The Coverage metrics for a particular web site are dependent on the specific traffic characteristics of that web site.
- application and operational controls provided reasonable assurance (based on the Control Objectives and Related Criteria described in 1 through 5) that the procedures used to calculate Accuracy metrics are completely and accurately applied as of December 31, 2010 based on the Control Objectives and Related Criteria described in 7. The usage data used in the calculation of the Accuracy metrics are taken from the most recent annual calculation period (June 1 to June 30 2010). The Accuracy metrics for a particular web site are dependent on the specific traffic characteristics of that web site and the accuracy of the Reference Data Set used for the measurement.

Quova's management is responsible for the assertion. Our responsibility is to express an opinion on management's assertion based on our examination.

Our examination was conducted in accordance with attestation standards established by the American Institute of Certified Public Accountants and, accordingly, included obtaining an understanding of internal control over those aspects of the geolocation application and related



processes that support the complete and accurate processing and reporting of information based on the Control Objectives and Related Criteria, testing and evaluating the design and operating effectiveness of internal control, and performing such other procedures as we considered necessary in the circumstances. We believe that our examination provides a reasonable basis for our opinion.

Because of inherent limitations in any internal control, misstatements due to error or fraud may occur and not be detected. Also, projections of any evaluation of internal control over geolocation application and related processes for future periods are subject to the risk that the internal control may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

In our opinion, management's assertion referred to above is fairly stated, in all material respects, based on the Control Objectives and Related Criteria set forth in the accompanying Management's Statement on the Effectiveness of Internal Control.

*Pricewaterhouse Coopers LLP*

San Jose, California  
March 18, 2011



## Management's Statement on the Effectiveness of Internal Control

### Introduction

Quova provides Internet Protocol (IP) geolocation services which enable the real-time geographic location of web site visitors to be determined. Quova's IP geolocation services include the following:

- GeoPoint - Quova's database of IP addresses and the network characteristic data for each. Such information includes the country, state, city, connection type, proxy information, and other characteristics important to the description of an IP address.
- GeoDirectory Server - Quova's system by which the GeoPoint data is delivered to their clients. This system automatically downloads data updates as they become available from Quova and also uploads data used to characterize web traffic to assist Quova in prioritizing research efforts. The acquisition of this information is a key part of Quova's Closed-Loop process.

Quova utilizes information from multiple internal and external sources to make geolocation decisions. A key internal source is their globally distributed company defined data collection network. This is comprised of collectors spread throughout the world which obtain traceroutes and hostnames for IP address ranges, also called network blocks. Quova also takes advantage of multiple independent external data sources to provide clues as to an IP address' location.

This information is fed to an application that combines all the data obtained for a given network block and assigns a location based on algorithm(s) best suited for the information at hand. Network Geography Analysts (NGAs) select a sample of the information gathered and conduct a review to ensure that the application is correctly assigning locations to IP addresses.

These NGAs also locate and assign network block locations outside of the Quality Assurance (QA) environment. GeoFeedback requests are submitted by customers who request that Quova re-evaluate an IP addresses location assignment or network characteristics. The NGAs investigate the referenced network, report the results of the research back to the client, and update the GeoPoint database if warranted by the available evidence. NGAs also conduct manual IP mappings for internal research efforts.

Management's assertion below describes its responsibility in maintaining effective internal control over those aspects of the geolocation application and related processes based on the Control Objectives and Related Criteria noted below.



## Management's Assertion

Quova, Inc. asserts that:

- internal control over the geolocation application and related processes was designed and operating effectively and management has maintained internal control over those aspects of the geolocation application and related processes that support the complete and accurate processing and reporting of information as of December 31, 2010 based on the Control Objectives and Related Criteria described 1 through 5.
- application and operational controls provided reasonable assurance (based on the Control Objectives and Related Criteria described in 1 through 5) that the procedures used to calculate Coverage metrics are completely and accurately applied as of December 31, 2010 based on the Control Objectives and Related Criteria described in 6. The usage data used in the calculation of the Coverage metrics are taken from the most recent annual calculation period (June 1 to June 30 2010). The usage data represents the aggregation of the web traffic of Quova's customers that participated in the Closed-Loop program during this period. The Coverage metrics for a particular web site are dependent on the specific traffic characteristics of that web site.
- application and operational controls provided reasonable assurance (based on the Control Objectives and Related Criteria described in 1 through 5) that the procedures used to calculate Accuracy metrics are completely and accurately applied as of December 31, 2010 based on the Control Objectives and Related Criteria described in 7. The usage data used in the calculation of the Accuracy metrics are taken from the most recent annual calculation period (June 1 to June 30 2010). The Accuracy metrics for a particular web site are dependent on the specific traffic characteristics of that web site and the accuracy of the Reference Data Set used for the measurement.



## Control Objectives and Related Criteria

1. Controls provide reasonable assurance that the upload of external data into the Quova database is performed completely and accurately.
  - Quova operates a globally distributed company defined Data Collection Network (DCN) spread across Asia, Europe, Australia, and North America to update, maintain, and enhance the accuracy of Quova's geolocation data. *(Completeness)*
  - Quova collects raw data from the DCN about IP networks including registry, host name and traceroute information based on a daily, weekly or monthly basis, as applicable. *(Completeness, Accuracy)*
  - Quova maintains automated and manual processes, such as a job console, to track and monitor the collection and processing of this information. *(Completeness, Accuracy)*
  
2. Controls provide reasonable assurance that the processes used for the mapping of IP locations are properly scheduled, run and monitored.
  - Quova's internal research systems take the raw IP network data collected through the DCN and automatically map IP networks by country, state, and city. *(Completeness, Accuracy)*
  - Mapping is performed regularly through a set of manual and automated processes, such as batch jobs, that are properly scheduled and monitored to ensure all jobs are completed, and any processing errors are reviewed and repaired. *(Completeness, Accuracy)*
  - Access to batch jobs is appropriately restricted to those individuals who support the DCN. *(Restricted Access)*
  - Change management processes are applied to the DCN to support the integrity of the data within the process. *(Accuracy)*
  
3. Controls provide reasonable assurance that Quova employs qualified Network Geography Analysts (NGAs) to perform analysis and improve the Coverage and Accuracy of Quova's geolocation data.
  - Quova employs qualified NGAs to analyze daily IP network blocks for specific global regions. *(Accuracy)*
  - NGAs are provided training to obtain additional data elements and domain information related to the targeted networks to enhance the Coverage and Accuracy of Quova's geolocation data. *(Accuracy)*



4. Controls provide reasonable assurance that changes to Quova's geolocation data identified by NGAs are reviewed, approved, and performed by authorized individuals.
  - Quova incorporates new domain knowledge (e.g., hostnames, registry, and label information) discovered by NGAs to improve the performance of Quova's automated mapping processes. *(Completeness, Accuracy)*
  - A quality review process over changes to domain knowledge is performed by a management authorized senior team member prior to the submission of the new/revised information into production. *(Restricted Access, Validity)*
5. Controls provide reasonable assurance that changes to Quova's geolocation data obtained from customer feedback is reviewed, approved and incorporated into the Quova geolocation database, where applicable.
  - Quova solicits feedback or requests from their customers on Quova's web site using the GeoFeedback process and reviewed by the NGA team. *(Completeness, Accuracy)*
  - Feedback is captured and addressed appropriately by management. In addition, potential exceptions are investigated and approval is required for resolution. *(Accuracy, Completeness, Validity)*
6. Controls provide reasonable assurance that the usage weighted Coverage metrics are calculated accurately and completely.
  - The usage weighted Coverage metrics are calculated by excluding IP addresses designated as "reserved" by the Internet Assigned Numbers Authority (IANA), and using Quova's usage data taken from the Closed-Loop process for the most recent annual calculation period (June 1 to June 30 2010): *(Completeness, Accuracy)*
  - Change management processes are applied to support the accuracy of the calculation procedures. *(Accuracy)*

<b>Geographic Area</b>	<b>Coverage Measurement</b>
Worldwide Country Coverage	99.9%
Worldwide State Coverage	99.4%
US State Coverage	99.9%

- The usage data represents the aggregation of the web traffic of Quova's customers that participated in the Closed-Loop program during this period. *(Completeness)*
- The Coverage metrics for a particular web site are dependent on the specific traffic characteristics of that web site. *(Completeness, Accuracy)*



7. Controls provide reasonable assurance that the usage weighted Accuracy metrics are calculated accurately and completely.

- The following usage weighted Accuracy metrics are calculated using independent third party Reference Data Sets (Data Set #1, Data Set #2 and Data Set #3) and Quova's usage data taken from the Closed-Loop process for the most recent annual calculation period (June 1 to June 30, 2010): (*Completeness, Accuracy*)
- Change management processes are applied to support the accuracy of the calculation procedures. (*Accuracy*)

<b>Country Accuracy Test Set</b>	<b>Accuracy Measurement</b>	<b>95% Confidence Interval</b>
Calculated from Data Set#1	99.9%	+/- 0.1%

<b>US State Accuracy Test Set</b>	<b>Accuracy Measurement</b>	<b>95% Confidence Interval</b>
Calculated from Data Set #2	96.1%	+/- 0.3%
Calculated from Data Set #3	95.5%	+/- 0.3%

- The Accuracy metrics for a particular web site are dependent on the specific traffic characteristics of that web site and the accuracy of the Reference Data Set used for the measurement. The Reference Data Sets #1, 2 & 3 were obtained from consumer e-commerce, consumer travel, and customer services web sites respectively. (*Completeness, Accuracy*)