UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, DC 20549

FORM 10-Q

(Mark One)

☒ **Quarterly Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934**

For the quarterly period ended June 30, 2013

OR

☐ **Transition Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934**

For the transition period from ____ to ____

Commission file number: 000-28238

APPLIED VISUAL SCIENCES, INC.

(Exact name of registrant as specified in its charter)

Delaware	**54-1521616**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)

525K East Market Street, # 116, Leesburg, Virginia 20176
(Address of principal executive offices and zip code)

(703) 539-6190
(Registrant's telephone number, including area code)

Not Applicable
(Former name, former address and former fiscal year, if changed since last report)

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ✓ No __

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Website, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ✓ No __

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer or a smaller reporting company. See definition of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. Large accelerated filer [ ] Accelerated filer [ ] Non-accelerated filer [ ] Smaller reporting company [✓]

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes __ No ✓

At November 5, 2013, the Registrant had 102,381,612 shares of Common Stock, $0.001 par value, outstanding.

NOTE REGARDING FORWARD-LOOKING STATEMENTS

Our disclosure and analysis in this Report contains forward-looking statements which provide our current expectations or forecasts of future events. Forward-looking statements in this Report include, without limitation:

- information concerning possible or assumed future results of operations, trends in financial results and business plans, including those related to earnings, earnings growth, revenue and revenue growth;
- statements about the level of our costs and operating expenses relative to our revenues, and about the expected composition of our revenues;
- statements about expected future sales trends for our products;
- statements about our future capital requirements and the sufficiency of our cash, cash equivalents, and available bank borrowings to meet these requirements;
- information about the anticipated release dates of new products;
- other statements about our plans, objectives, expectations and intentions;
- and other statements that are not historical fact.

Forward-looking statements generally can be identified by the use of forward-looking terminology such as "believes," "expects," "may," "will," "intends, "plans," "should," "seeks," "pro forma," "anticipates," "estimates," "continues," or other variations thereof (including their use in the negative), or by discussions of strategies, plans or intentions. Such statements include but are not limited to statements under Part I, Item 1A - Risk Factors of our Form 10-K for the year ended December 31, 2012, Part I, Item 2 - Management's Discussion and Analysis of Financial Condition and Results of Operations in this Report, and elsewhere in this Report. A number of factors could cause results to differ materially from those anticipated by such forward-looking statements, including those discussed under Part II, Item 1A - Risk Factors of this Report. The absence of these words does not necessarily mean that a statement is not forward-looking. Forward-looking statements are subject to known and unknown risks and uncertainties and are based on potentially inaccurate assumptions that could cause actual results to differ materially from those expected or implied by the forward-looking statements. Our actual results could differ materially from those anticipated in the forward-looking statements for many reasons, including factors described in Part I, Item 1A - Risk Factors of our Form 10-K for the year ended December 31, 2012, and Part II, Item 1A – Risk Factors of this Report. You should carefully consider the factors described in Part I, Item 1A - Risk Factors of our Form 10-K for the year ended December 31, 2012, and Part II, Item 1A – Risk Factors of this Report in evaluating our forward-looking statements.

You should not unduly rely on these forward-looking statements, which speak only as of the date of this Report. We undertake no obligation to publicly revise any forward-looking statement to reflect circumstances or events after the date of this Report, or to reflect the occurrence of unanticipated events. You should, however, review the factors and risks we describe in the reports we file from time to time with the Securities and Exchange Commission ("SEC").

APPLIED VISUAL SCIENCES, INC.
TABLE OF CONTENTS

PART I. FINANCIAL INFORMATION

ITEM 1. FINANCIAL STATEMENTS

APPLIED VISUAL SCIENCES, INC. AND SUBSIDIARIES

(A Development Stage Company)

CONDENSED CONSOLIDATED BALANCE SHEETS

	June 30 2013 (Unaudited)	December 31 2012
ASSETS		
Current Assets		
Cash and cash equivalents	$ 9,360	$ 3,445
Prepaid expenses	2,885	1,115
Total current assets	12,245	4,560
Equipment, net	74,626	116,135
Other Assets		
Other noncurrent assets	-	11,122
Intangible assets, net	314,708	331,163
Total assets	$ 401,579	$ 462,980
LIABILITIES AND STOCKHOLDERS' EQUITY (DEFICIT)		
Current Liabilities		
Accounts payable	$ 1,610,339	$ 1,570,639
Accrued wages and related	7,634,677	7,177,753
Other accrued liabilities	108,048	72,804
Notes payable and advances, related parties	80,500	89,000
Notes payable, net of discount	694,917	559,704
Convertible debentures	2,025,846	2,025,846
Derivative liabilities - embedded conversion feature of debentures	540,226	202,585
Total current liabilities	12,694,553	11,698,331
Stockholders' Equity (Deficit)		
Convertible preferred stock, $0.20 par value; authorized 1,000,000 shares		
Shares issued and outstanding at June 30, 2013 - none		
Shares issued and outstanding at December 31, 2012 - none	-	-
Common stock, $0.001 par value; authorized 200,000,000 shares		
Shares issued and outstanding at June 30, 2013 - 101,026,612		
Shares issued and outstanding at December 31, 2012 - 95,318,279	101,027	95,318
Additional paid-in capital	82,659,150	82,117,522
Accumulated comprehensive income	63,354	63,354
Deficit accumulated during operating stage	(92,323,180)	(92,323,180)
Deficit accumulated during development stage	(2,793,325)	(1,188,365)
Total stockholders' equity (deficit)	(12,292,974)	(11,235,351)
Total liabilities and stockholders' equity (deficit)	$ 401,579	$ 462,980

See notes to condensed consolidated financial statements.

APPLIED VISUAL SCIENCES, INC. AND SUBSIDIARIES

(A Development Stage Company)

CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS AND COMPREHENSIVE INCOME (LOSS)

(Unaudited)

	Three Months Ended June 30		Six Months Ended June 30		Cumu Apr (date
	2013	2012	2013	2012	To Ju
Net revenues	$ -	$ -	$ -	$ -	$
Cost of sales	-	-	-	-	
Gross profit	-	-	-	-	
Selling, general and administrative expense	631,813	404,743	1,237,126	925,895	
Operating loss	(631,813)	(404,743)	(1,237,126)	(925,895)	
Other income (expense)	(287,988)	39,225	(367,834)	(55,359)	
Net loss	$ (919,801)	$ (365,518)	$(1,604,960)	$ (981,254)	$
Net loss per common share					
Basic & Diluted	$ (0.01)	$ (0.00)	$ (0.02)	$ (0.01)	
Weighted average common shares outstanding					
Basic & Diluted	101,026,612	92,555,328	100,322,940	91,233,016	
Other comprehensive income					
Comprehensive income - beginning of period	$ 63,354	$ 63,354	$ 63,354	$ 63,354	$
Cumulative translation adjustments	-	-	-	-	
Comprehensive income - end of period	$ 63,354	$ 63,354	$ 63,354	$ 63,354	$

See notes to condensed consolidated financial statements.

APPLIED VISUAL SCIENCES, INC. AND SUBSIDIARIES

(A Development Stage Company)

CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS

(Unaudited)

	Six Months Ended June 30		Cumulative From April, 1, 2012 (date of inception To June 30, 201
	2013	2012	
CASH FLOWS FROM OPERATING ACTIVITIES			
Net loss	$(1,604,960)	$ (981,254)	$ (2,793,3
Adjustments to reconcile net loss to net cash used in operating activities:			
Depreciation and amortization	37,368	49,363	104,
Amortization of debt discounts	3,063	21,787	33,
Stock-based compensation expense	514,337	11,125	598,
Revaluation of derivative instrument income	337,641	-	202,
Noncash broker compensation expense	-	2,700	2,
(Gain) / Loss on disposal of fixed assets	(8,338)	-	3,
Changes in operating assets and liabilities:			
Decrease (Increase) in prepaid expenses	(1,770)	1,275	(2
Decrease in other noncurrent assets	11,122	-	11,
Increase in accounts payable	44,850	170,914	265,
Increase in accrued wages and related	481,924	527,422	1,240,
Increase in other accrued liabilities	35,244	30,872	84,
Net cash flows used in operating activities	(149,519)	(165,796)	(246,4
CASH FLOWS FROM INVESTING ACTIVITIES			
Investment in patents	-	(475)	
Proceeds from sale of fixed assets	28,934	-	64,
Net cash provided by (used in) investing activities	28,934	(475)	64,
CASH FLOWS FROM FINANCING ACTIVITIES			
Proceeds from issuance of common stock, net	-	25,000	
Proceeds from short-term notes payable, net	135,000	135,000	195,
Reduction of short-term notes payable, net of additional notes, related party	(8,500)	-	(8,5
Net cash flows provided by financing activities	126,500	160,000	186,
Net increase (decrease) in cash and cash equivalents	5,915	(6,271)	4,
Cash and cash equivalents at beginning of the period	3,445	6,490	4,
Cash and cash equivalents at end of the period	$ 9,360	$ 219	$ 9,
Supplemental disclosure of cash flow information:			
Conversion of accounts payable and other accrued liability to common stock	$ 5,150	$ 100,000	$ 5,
Conversion of accrued wages to common stock	25,000	170,417	124,

See notes to condensed consolidated financial statements.

NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
(Unaudited)

(1) Description of Business

Overview

Applied Visual Sciences, Inc. was incorporated under the name Guardian Technologies International, Inc., in the Commonwealth of Virginia in 1989 and reincorporated in State of Delaware in February 1996. We changed our name to Applied Visual Sciences, Inc., on July 9, 2010. The Company, previously an operating stage company, became a development stage company on April 1, 2012, the date of inception as a development stage company for financial reporting. Applied Visual Sciences, Inc. and its subsidiaries are collectively referred to herein as the "Company," "Applied Visual Sciences, Inc.," "Applied Visual," "us," "we," or "our."

Applied Visual Sciences is a software technology company that designs and develops imaging informatics solutions for delivery to its target markets, aviation/homeland security and healthcare. Our two product lines are offered through our two operating subsidiaries as follows: Guardian Technologies International, Inc. for aviation/homeland security products and Signature Mapping Medical Sciences, Inc., for healthcare. On March 23, 2012, the Company established a new entity; Instasis Imaging, Inc., for the development, marketing, and sales of a suite of imaging analytic applications for the automated detection of breast cancer. We may engage in one or more acquisitions of businesses that are complementary, and may form wholly-owned subsidiaries to operate within defined vertical markets products.

The Company utilizes imaging technologies and analytics to create integrated information management technology products and services that address critical problems experienced by corporations and governmental agencies in healthcare and homeland security. Each product and service can improve the quality and response time of decision-making, organizational productivity, and efficiency within the enterprise. Our product suite integrates, streamlines, and distributes business and clinical information and images across the enterprise.

Our Business Strategy

Our strategic vision is to position our core technology as the de facto standard for digital image analysis, knowledge extraction, and detection. Our strategy is based upon the following principal objectives:

- Maintain product development and sales/marketing focus on large, underserved, and rapidly growing markets with a demonstrated need for intelligent imaging informatics.
- Leverage Applied Visual Sciences, Inc.'s technology, experienced management team, research and development infrastructure.
- Focus our talents on solving highly challenging information problems associated with digital imaging analysis.
- Establish an international market presence through the development of a significant OEM/Reseller network.
- Build and maintain a strong balance sheet to ensure the availability of capital for product development, acquisitions, and growth.
- Seek to broaden our investment appeal to large institutions.

To achieve our strategic vision, we are aware of the need to exercise the financial and operational discipline necessary to achieve the proper blend of resources, products and strategic partnerships. These efforts can accelerate our ability to develop, deploy and service a broad range of intelligent imaging informatics solutions directly to our target markets and indirectly through OEM/value added reseller ("VAR") partners. During 2012, we continued implementing changes across the spectrum of our business. We refined our marketing strategy for PinPoint™ and Signature Mapping™, and enhanced our Signature Mapping™ product offerings.

We may engage in one or more acquisitions of businesses that are complementary, and may form wholly-owned subsidiaries to operate within defined vertical markets.

Our Core Technology

Our core technology is an "intelligent imaging informatics" ("3i™") engine that is capable of extracting embedded knowledge from digital images, and has the capacity to analyze and detect image anomalies. The technology is not limited by type of digital format. It can be deployed across divergent digital sources such as still images, x-ray images, video and hyper-spectral imagery. To date, the technology has been tested in the area of threat detection for baggage scanning at airports, for bomb squad applications and the detection of tuberculosis by analyzing digital images of stained sputum slides captured through a photo microscopy system. Varying degrees of research and development have been conducted in the areas of detection for cargo scanning, people scanning, military target acquisition in a hyper-spectral environment, satellite remote sensing ground surveys and mammography CAD products and

radiologists' diagnostic imaging tools, and while product development in these areas is ongoing, there can be no assurance that we will successfully develop product offerings in these areas.

We are currently focused on providing software technology solutions and services in two primary markets - aviation/homeland security with PinPoint™ and healthcare technology with Signature Mapping™ solutions. However, as new or enhanced solutions are developed, we expect to expand into other markets such as military and defense utilizing hyper-spectral technology, and imaging diagnostics for the medical industry.

(2) Basis of Presentation

The Company, previously an operating stage company, became a development stage company on April 1, 2012, the date of inception as a development stage company for financial reporting. A development stage company, as defined by ASC-915-10 "Accounting and Reporting by Development Stage Enterprise", is an entity that devotes substantially all of its efforts to establish a business and either of the following conditions exists: 1) the principal operations have not commenced, or 2) the principal operations have commenced, but there has been no significant revenue therefrom.

The unaudited condensed consolidated financial statements have been prepared by the Company pursuant to the rules and regulations of the Securities and Exchange Commission ("SEC"). The accompanying unaudited condensed consolidated financial statements do not include complete footnotes and financial statement presentations. As a result, these unaudited condensed consolidated financial statements should be read along with the audited consolidated financial statements and notes thereto for the year ended December 31, 2012, included in our 2012 Annual Report on Form 10-K. In our opinion, the unaudited condensed consolidated financial statements reflect all adjustments, including normal recurring adjustments, necessary for a fair presentation of the financial position, results of operations and cash flows for those periods presented. The preparation of financial statements in conformity with United States (U.S.) generally accepted accounting principles requires management to make estimates and assumptions that affect reported assets, liabilities, revenues and expenses, as well as disclosure of contingent assets and liabilities. Actual results could differ from those estimates and assumptions. Moreover, the results of operations for the interim periods presented are not necessarily indicative of the results that may be expected for the entire year.

The Company maintains a website at *www.appliedvs.com*, which makes available free of charge our recent annual report and other filings with the SEC. In addition to its website, the Company also disseminates material non-public information on Facebook at https://www.facebook.com/appliedvs, and on Twitter at https://mobile.twitter.com/appliedvs.

These unaudited condensed consolidated financial statements have been prepared assuming that the Company will continue as a going concern and, accordingly, do not include any adjustments that might result from the outcome of this uncertainty. Our independent registered public accounting firm's reports on the consolidated financial statements included in our annual report on Form 10-K for the year ended December 31, 2012, contains an explanatory paragraph wherein it expressed an opinion that there is substantial doubt about our ability to continue as a going concern. Accordingly, careful consideration of such opinion should be given in determining whether to continue or become our stockholder.

Summary of Significant Accounting Policies

The Company, previously an operating stage company, became a development stage company on April 1, 2012, the date of inception as a development stage company for financial reporting. A development stage company, as defined by ASC-915-10 "Accounting and Reporting by Development Stage Enterprise", is an entity that devotes substantially all of its efforts to establish a business and either of the following conditions exists: 1) the principal operations have not commenced, or 2) the principal operations have commenced, but there has been no significant revenue therefrom.

As disclosed in our most recent Annual Report on Form 10-K for the fiscal year ended December 31, 2012, the discussion and analysis of our financial condition and results of operations are based upon the consolidated financial statements, which have been prepared in conformity with United States (U.S.) generally accepted accounting principles. The preparation of these financial statements requires the Company to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenues and expenses reported in those financial statements. These judgments can be subjective and complex and, consequently, actual results could differ from those estimates and assumptions. Since December 31, 2012, there have been no significant changes to the assumptions and estimates related to those critical accounting policies. The Company has disclosed in Part I, Item 4. Controls and Procedures of this report that our disclosure controls and procedures were not effective during the period, as a result of the Company filing its December 31, 2012 Form 10-K on May 13, 2013, which was due on March 31, 2013, and the late filing of this report on Form 10-Q, which was due on August 14, 2013.

The accompanying consolidated financial statements include the accounts of the Company and its subsidiaries, RJL Marketing Services, Guardian Technologies International, Inc., Signature Mapping Medical Sciences, Inc., Instasis Imaging, Inc., Guardian Healthcare Systems UK, Ltd., and Wise Systems Ltd., in which it has the controlling interest. Subsidiaries acquired are consolidated from the date of acquisition. All significant intercompany balances and transactions have been eliminated.

The carrying value of cash and cash equivalents, accounts receivable, accounts payable, and embedded conversion features and detachable warrants approximates fair value based on the liquidity of these financial instruments and their short-term nature.

The Company reviews the terms of convertible debt and equity securities for indications requiring bifurcation, and separate accounting, for the embedded conversion feature. Under guidelines of ASC 815-40, "Accounting for Derivative Financial Instruments Indexed to, and Potentially Settled in, a Company's Own Stock," public companies that are required, or that could be required, to deliver shares of common stock as part of a physical settlement or a net-share settlement, under a freestanding financial instrument, are required to initially measure the contract at fair value (or allocate on a fair value basis if issued as part of a debt financing), and report the value in permanent equity. However, in certain circumstances (e.g. the company could not ascertain whether sufficient authorized shares exist to settle the contract), permanent equity classification should be reassessed. The classification of the contract as permanent equity should be reassessed at each balance sheet date and, if necessary, reclassified as a liability on the date of the event causing the reclassification. If a reclassification occurs from permanent equity to a liability, the fair value of the financial instrument should be removed from permanent equity as an adjustment to stockholders' equity. Any portion of the contract that could be net-share settled as of the balance sheet date would remain classified in permanent equity. Subsequent to the initial reclassification event, changes in fair value of the instrument are charged to expense until the conditions giving rise to the reclassification are resolved. When a company has more than one contract subject to reclassification, it must determine a method of reclassification that is systematic, rational, and consistently applied. The Company adopted a reclassification policy that reclassifies contracts with the latest inception date first. To the extent that changes in fair value of equity instruments relates to financings since November 8, 2006 (the date of first closing under the debenture financing with reset provisions that made the number of potentially issuable shares indeterminable), the increase or decrease in the fair value of the warrants is charged or credited to interest expense. To the extent the equity instruments relate to other transactions (e.g. consulting expense), the increases or decreases are charged or credited based on the nature of the transaction. The number of additional shares potentially issuable under the November 8, 2006, outstanding convertible debentures and related outstanding warrants and other subsequent warrants issued was determinable as of the debentures' final milestone reset date on May 20, 2008, and, therefore, the outstanding fair value of the warrants issued to the debenture holders, other subsequent warrants issued through May 20, 2008, and the warrants' related beneficial conversion feature were reclassified as stockholders' equity in accordance with currently effective generally accepted accounting principles.

Reclassifications

Certain reclassifications of previously reported amounts have been made to conform to the current period presentation. These classifications had no effect on the previously reported net loss.

Segment Data and Related Information

ASC 280-10, "Disclosures about Segments of an Enterprise and Related Information," establishes standards for the manner in which public companies report information about operating segments in annual and interim financial statements. It also establishes standards for related disclosures about products and services, geographic areas, and major customers. The method for determining what information to report is based on the way management organizes the operating segments within the Company for making operating decisions and assessing financial performance. The Company's chief operating decision-maker is considered to be the Company's chief executive officer ("CEO"). The CEO reviews financial information presented on an entity level basis accompanied by disaggregated information about revenues by product type and certain information about geographic regions for purposes of making operating decisions and assessing financial performance. The entity level financial information is identical to the information presented in the accompanying consolidated statements of operations.

The Company has two groups of products and services - Security (PinPoint™) and Healthcare (Signature Mapping™ Medical Computer Aided Detection ("Medical CAD"), and operates in three geographic markets. The Company has determined that as of the balance sheet date, it operates as a single operating unit since the two products make up a slight revenue stream to the Company.

The Company operates in North America, and Africa and Asia. In general, revenues are attributed to the country in which the contract originates. There were no revenues for the six months ended June 30, 2013. Our product and service categories would include software licenses, research funding, maintenance support, and hardware. The Company continues to focus efforts in developing the Signature Mapping™ imaging technologies, while at the same time pursuing opportunities for our security product/services. The following information represents software license activities. The Company continues to present the segmentation as they continue to develop their services by product and geographic location.

GEOGRAPHIC DATA	Three Months Ended June 30		Six Months Ended June 30		Cumulative From April, 1, 2012 (date of inception)
	2013	2012	2013	2012	To June 30, 2013
Net revenues					

The Americas	$ -	$ -	$ -	$ -	$ -
Africa and Asia	-	-	-	-	-
Total net revenue	$ -	$ -	$ -	$ -	$ -
Cost of sales					
The Americas	$ -	$ -	$ -	$ -	$ -
Africa and Asia	-	-	-	-	-
Total cost of sales	$ -	$ -	$ -	$ -	$ -
Operating (loss)					
The Americas	$(631,813)	$(404,743)	$(1,237,126)	$ (925,895)	$ (2,468,228)
Africa and Asia	-	-	-	-	-
Total operating loss	$(631,813)	$(404,743)	$(1,237,126)	$ (925,895)	$ (2,468,228)
Depreciation and amortization					
The Americas	$ 18,684	$ 24,682	$ 37,368	$ 49,363	$ 104,450
Africa and Asia	-	-	-	-	-
Total depreciation and amortiz	$ 18,684	$ 24,682	$ 37,368	$ 49,363	$ 104,450
Total assets					
The Americas			$ 401,579	$ 550,311	
Africa and Asia			-	-	
Total assets			$ 401,579	$ 550,311	
Long-lived assets, net					
The Americas			$ 389,334	$ 537,635	
Africa and Asia			-	-	
Total long-lived assets, net			$ 389,334	$ 537,635	

Long-lived assets, net: consists of software, goodwill, patents, property and equipment, and other noncurrent assets.

Stock-Based Compensation

The Company has two active equity compensation plans which include the Amended and Restated 2003 Stock Incentive Plan and the 2009 Stock Compensation Plan (collectively, the "Plans"). A total of 50,000,000 shares have been reserved for issuance under these Plans in the form of stock-based awards to employees, non-employee directors and outside consultants of the Company, of which 4,871,353 shares remain available for issuance thereunder as of June 30, 2013. The grant of awards under the Plans require approval by the Compensation Committee of the Board of Directors of the Company (or the Board of Directors, in the absence of such a committee) (the "Committee"), and the Committee is authorized under the Plans to take all actions that it determines to be necessary or appropriate in connection with the administration of the Plans.

The Company adopted the provisions of ASC 718-10, "Share-Based Payment" to account for its share-based payments. ASC 718-10 requires all share-based payments to employees, or to non-employee directors as compensation for service on the Board of Directors, to be recognized as compensation expense in the consolidated financial statements based on the estimated fair values of such options as calculated using the Black-Scholes model, and the related expense is recognized on a straight-line basis over the service period to vesting for each grant, net of estimated forfeitures. The Company's estimated forfeiture rates are based on its historical experience within separate groups of employees. In accordance with ASC 718-10, the Company recognized total stock-based compensation expense for employees and non-employee members of the Board of Directors for the six months ended June 30, 2013 of $508,837 and $0 for the same period during 2012.

The Company accounts for stock options granted to non-employees in accordance with ASC 718-10 and ASC 505-50, "Accounting For Equity Instruments That Are Issued To Other Than Employees For Acquiring, Or In Conjunction With Selling, Goods Or Services." ASC 505-50 establishes the measurement principles for transactions in which equity instruments are issued in exchange for the receipt of goods or services. The Company has relied upon the guidance provided under ASC 505-50 to determine the measurement date and the fair value re-measurement principles to be applied, and recognizes as an expense the estimated fair value of such options as calculated using the Black-Scholes model. The fair value is remeasured during the service period at each balance sheet date, and is amortized over the remaining service period to vesting for each option or the remaining term of the recipient's contractual arrangement, whichever is shorter. The Company recognizes compensation costs, net of an estimated forfeiture rate, on a pro rata basis over the requisite service period of each vesting tranche of each award. The Company considers voluntary termination behavior as well as trends of actual option forfeitures when estimating the forfeiture rate. Total stock-based compensation expense for consultants during the six months ended June 30, 2013 and the same period in 2012 were $5,500 and $11,125, respectively.

The Black-Scholes Merton option valuation model (Black-Scholes model) was developed for use in estimating the fair value of traded options, which have no vesting restrictions and are not transferable. The fair value of each option granted was estimated using the Black-Scholes model with the following weighted-average assumptions:

Black-Scholes Model Assumptions	2013	2012
Risk-free interest rate (1)	0.99%	2.27%
Expected volatility (2)	163.6%	136.7%
Dividend yield (3)	0.0%	0.0%
Expected life (4)	5.4 years	6.5 years

(1) The risk-free interest rate is based on US Treasury debt securities with maturities similar to the expected term of the option.

(2) Expected volatility is based on historical volatility of the Company's stock factoring in daily share price observations.

(3) No cash dividends have been declared on the Company's common stock since the Company's inception, and the Company currently does not anticipate paying cash dividends over the expected term of the option.

(4) The expected term of stock option awards granted is derived from historical exercise experience under the Company's stock option plan and represents the period of time that stock option awards granted are expected to be outstanding. The expected term assumption incorporates the contractual term of an option grant, which is usually ten years, as well as the vesting period of an award, which is generally pro rata vesting over two years.

The Amended and Restated 2003 Stock Incentive Plan

The Board of Directors adopted the 2003 Stock Incentive Plan on August 29, 2003. The plan may be modified or terminated at any time, and any such amendment or termination will not affect outstanding options without the consent of the optionee. The Board of Directors amended and restated the plan on December 2, 2003. The Amended and Restated 2003 Stock Incentive Plan ("2003 Plan") was approved by the shareholders on February 13, 2004, pursuant to which it grants stock-based compensation in the form of options, which will result in the issuance of up to an aggregate of 30,000,000 shares of the Company's common stock. The 2003 Stock Incentive Plan terminates on August 29, 2013. The aggregate number of shares and the number of shares in an award (as well as the option price) may be adjusted if the outstanding shares of the Company are increased, decreased or exchanged through merger or other stock transaction. The Plan provides for options which qualify as Incentive Stock Options under Section 422 of the Internal Revenue Code of 1986, as well as the issuance of Non-Qualified Options, which do not so qualify. Pursuant to the terms of the 2003 Plan, the Company, as determined by the Board of Directors or a committee appointed by the Board, may grant Non-Qualified Stock Options ("NQSOs") to its executive officers, non-employee directors, or consultants of the Company and its subsidiaries at any time, and from time to time. The 2003 Plan also provides for Incentive Stock Options ("ISOs") to be granted to any officer or other employee of the Company or its subsidiaries at any time, and from time to time, as determined by the Compensation Committee. Such stock options granted allow a grantee to purchase a fixed number of shares of the Company's common stock at a fixed exercise price not be less than the quoted market price (or 110% thereof for Incentive Stock Options issued to a holder of 10% or greater beneficial ownership) of the shares on the date granted. The options may vest on a single date or over a period of time, but normally they do not vest unless the grantee is still employed by, or a director of, the Company on the vesting date. Generally for all employees, the options vest 50% after the first year from the date of grant and the remaining 50% after the second year from the date of grant. Stock options granted to independent board of directors vest 100% after the service period, which generally is one year from the date of grant.

Factors considered in granting stock options included: (i) the general policy during the past five, and in the foreseeable future, of not increasing base salaries of all employees, (ii) the performance of employees, (iii) the employees' increasing responsibilities in a dynamic, and shrinking organization, and (iv) the accomplishments achieved by the Company during the prior year. The 2003 Plan has been the principal method for our employees and executive officers to acquire equity interests in the Company. We believe that the annual aggregate value of these awards should be set near competitive median levels for comparable companies. We may provide a greater portion of total compensation to our executives and employees through stock options given the general policy of not increasing base salaries in the foreseeable future. Our Compensation Committee administers the 2003 Plan based on the above factors, and the Committee approved the grant of stock options to all current employees, including its named executives, during 2007 through 2009 as an incentive for continued contributions in moving our product development efforts forward. Stock options were not granted to employees, including its named executives, during 2012 and 2011, as the Company did not achieve the desired results during 2010 and 2011. Also, the Compensation Committee, based on management's recommendation and discussions with the Committee, may grant stock options to new employees. There were no stock options granted to new employees during the first six months of 2013, since there were no new employees hired during this period.

Options granted under the Plan must be evidenced by a stock option agreement in a form consistent with the provisions of the 2003 Plan. Each option shall expire on the earliest of (a) ten (10) years from the date it is granted, (b) sixty (60) days after the optionee dies or becomes disabled, (c) immediately upon the optionee's termination of employment or service or cessation of Board service, whichever is applicable, or (d) such date as the Committee shall determine, as set forth in the relevant option agreement; provided, however, that no ISO which is granted to an optionee who, at the time such option is granted, owns stock possessing more than ten (10) percent of the total

combined voting power of all classes of stock of the Company or any of its subsidiaries, shall be exercisable after the expiration of five (5) years from the date such option is granted.

To exercise an option, the 2003 Plan participant, in accordance with the relevant option agreement, must provide the Company a written notice setting forth the number of options being exercised and their underlying shares, and tender an amount equal to the total exercise value of the options being exercised. The right to purchase shares is cumulative so that once the right to purchase any shares has vested; those shares or any portion of those shares may be purchased at any time thereafter until the expiration or termination of the option. ISOs and NQSOs that are not exercised in accordance with the terms and provisions of the stock option agreement, or as amended, will expire as to any then unexercised portion. Stock options that expire, are cancelled, or forfeited will again become available for issuance under the 2003 Plan as described below. The aggregate number of shares and the number of shares in an award (as well as the option price) may be adjusted if the outstanding shares of the Company are increased, decreased or exchanged through merger or other stock transaction. The shares issued by the Company under the 2003 Plan may be either treasury shares or authorized but unissued shares as the Company's board of directors or the Compensation Committee may determine from time to time. Except as specifically provided in an option agreement, options granted under the 2003 Plan may not be sold, pledged, transferred or assigned in any way, except by will or by the laws of descent and distribution, and during the lifetime of a participant to whom the ISOs is granted, and the ISOs may only be exercised by the participant.

The Board of Directors granted 14,650,000 stock options to all employees, including its named executives, under the 2003 Plan during the six months ended June 30, 2013, and the fair value of the options is $439,500, of which $402,875 was recognized as stock-based compensation expense during the six months ended June 30, 2013. The stock options were granted in consideration for the continued deferral of salaries during 2012 and 2013 to-date, as well as for the incentive for ongoing contributions in moving our product development efforts forward. The Company has reserved under the plan 24,159,347 shares to be issued upon exercise of outstanding options, and 3,536,353 remain available for future awards. Compensation expense for stock options granted is recognized over the requisite service period, which is typically the period over which the stock-based compensation awards vest.

Stock Options Exercised under the 2003 Plan

There were no stock options exercised during the first six months of 2013, and during the same period in 2012.

Summary of stock option activity under the 2003 Plan for the six months ended June 30, 2013 issued to employees, non-employee members of the Board of Directors and consultants is as follows:

Fiscal Year and Activity	Weighted-Average Exercise Price	Number of Options
Outstanding December 31, 2012	$ 0.32	9,509,347
Fiscal 2013 activity		
Granted	0.03	14,650,000
Exercised	-	-
Cancelled	-	-
Outstanding June 30, 2013	0.15	24,159,347
Reserved for future issuance at June 30, 2013		3,536,353

The following table summarizes additional information about the 2003 Plan stock options outstanding at June 30, 2013:

	Issued and Outstanding				Exercisable	
Type of Option and Range of Exercise Prices	Number of Options	Weighted-Average Remaining Contractual Life (Yrs)	Weighted-Average Exercise Price		Number of Options	Weighted-Average Price
Nonqualified Stock Options $0.30 (1) (5)	850,000	0.5	$	0.30	850,000	$ 0.30
Nonqualified Stock Options $0.30 (2) (5)	44,000	1.6		0.30	44,000	0.30
Incentive Stock Options $0.15 - $4.05 (3)	649,300	4.3		0.98	649,300	0.98
Incentive Stock Options $0.03 - $0.30 (4) (5)	22,616,047	7.7		0.12	15,291,049	0.29
Total	24,159,347	7.4	$	0.15	16,834,349	$ 0.34

(1) Initially issued to employees below fair value during the period of July 2003 through February 2004.

(2) Initially issued to directors below fair value during the period of February 2004 through September 2005.

(3) Issued to consultants at fair value.

(4) Issued to directors and employees at fair value, or above fair value for those individuals with greater than 10% beneficial ownership.

(5) The exercise price reflects the repricing of stock options as approved by the Compensation Committee on April 24, 2010.

The 2009 Stock Compensation Plan

On June 4, 2009, the Board of Directors adopted the 2009 Stock Compensation Plan ("2009 Plan) which provides for the grant or issuance of up to an aggregate of 20,000,000 shares of the Company's common stock pursuant to non-qualified stock options ("NQSOs"), restricted stock awards ("RSAs"), restricted stock rights ("RSRs"), or common stock awards ("Common Stock Awards") (a NQSO, RSA, RSR or Common Stock Award, individually, an "Award;" collectively, "Awards"). Our Board of Directors has delegated its authority to administer the 2009 Plan to the Compensation Committee.

The purpose of the 2009 Plan is to foster our success and the success of our subsidiaries and affiliates by providing incentives to employees, directors, officers and consultants to promote our long-term financial success. The Plan complements our 2003 Amended and Restated Stock Incentive Plan (the "2003 Plan") and provides greater flexibility to us in that it permits us to compensate and award employees, directors, officers and consultants through the issuance of certain options, RSAs, RSRs, and stock awards in addition, or as an alternative, to the incentive and non-qualified stock options that may be awarded under the 2003 Plan. The 2009 Plan terminates on June 4, 2019, and no award may be made after that date, however, awards made before that date may extend beyond that date. If an award under the 2009 Plan is cancelled, expires, forfeited, settled in cash or otherwise terminates without being exercised in full, the shares of common stock not acquired pursuant to the award will again become available for issuance under the 2009 Plan. The Board may amend, terminate, or modify the 2009 Plan at any time, without shareholder approval, unless required by the Internal Revenue Code of 1986, pursuant to Section 16 under the Securities Exchange Act of 1934, as amended, or by any national securities exchange or system on which our common stock is then listed or reported, or by any regulatory body.

Subject to the provisions of the 2009 Plan, the Compensation Committee has the power to:

- Prescribe, amend, and rescind rules and regulations relating to the 2009 Plan and to define terms not otherwise defined therein;
- Determine which persons are eligible to participate, to which of such participants, if any, awards shall be granted, and the timing of any such awards;
- Grant awards to participants and determine the terms and conditions thereof, including the number of shares subject to awards and the exercise or purchase price of such shares and the circumstances under which awards become exercisable or vested or are forfeited or expire;
- Establish any performance goals or other conditions applicable to the grant, issuance, exercisability, vesting and/or ability to retain any award;
- Prescribe and amend the terms of the agreements or other communications evidencing awards made under the 2009 Plan (which need not be identical) and the terms or form of any document or notice required to be delivered to us by participants under the 2009 Plan;
- Determine the appropriate adjustment, if any, required as a result of any reorganization, reclassification, combination of shares, stock split, reverse stock split, spin-off or dividend (other than regular, quarterly cash dividends), or other changes in the number or kind of outstanding shares or any stock or other securities into which such shares shall have been exchanged;
- Interpret and construe the 2009 Plan, any rules and regulations under the 2009 Plan and the terms and conditions of any award granted thereunder, and to make exceptions to any such provisions in good faith and for the benefit of the Company; and
- Make all other determinations deemed necessary or advisable for the administration of the 2009 Plan.

Unless the Board expressly provides otherwise prior to a change of control or in an award agreement, in the event of a change of control of the Company, all outstanding options under the 2009 Plan vest and become exercisable on the date immediately before the

change of control and all restrictions under RSAs and RSRs shall lapse or be deemed satisfied on the date immediately prior to the change of control. A change of control is deemed to have occurred upon the occurrence of one of the following events: (i) any person or group of persons becomes the beneficial owner of shares of the Company to which 50% or more of the total number of votes for the election of directors may be cast; (ii) as a result of a cash tender offer, exchange offer, merger or other business combination, sale of assets or contested election, persons who were directors immediately prior to the event cease to constitute a majority of the board; (iii) stockholders approve an agreement providing either that the Company will cease to be an independent publicly owned corporation or for sale or other disposition of all or substantially all the assets of the Company; or (iv) a tender offer or exchange offer is made for shares of our common stock (other than one made by us) and shares of common stock are acquired.

The Compensation Committee determines all awards to non-employee directors and such awards are not subject to management's discretion. From time to time, the committee will set the amount and the type of award that will be granted to non-employee directors on a periodic, nondiscriminatory basis, including pursuant to any plan adopted by the Compensation Committee or Board for the compensation of non-employee directors. The committee may set additional awards to be granted to non-employee directors also on a periodic, nondiscriminatory basis based on one or more of the following criteria: (i) service as the chair of a Board committee; (ii) service as chairman of the Board; (iii) the number or type of Board committees on which a director serves; or (iv) the first selection or appointment of an individual to the Board.

Non-qualified stock options may be granted pursuant to non-qualified stock option award agreements and certificates adopted by the Board, as amended by the Compensation Committee. The Compensation Committee determines the terms of each stock option granted under the 2009 Plan, including the number of shares covered by an option, exercise price and means of payment, the vesting and exercisability of the option, and restrictions on transfer and the term. The exercise price of an option granted under the Plan may not be less than the fair market value on the date of option grant and may only be exercised at such times as may be specified by the Committee and provided for in an award agreement. The options expire on the earliest of ten years after the date of grant, 90 days after the death or disability of the recipient, immediately upon termination of employment or service other than by death or disability, or such date as the Compensation Committee determines. The Compensation Committee, in its sole discretion, may change by agreement the post-termination rights of a recipient, including accelerating the date or dates on which the option becomes vested and is exercisable following termination of employment or service, or extend the period. Options granted under the plan may be exercised by delivering cash, a cashless exercise, or by delivering to us the proceeds of shares of our common stock issuable under an option. Compensation expense for non-qualified stock options is recognized over the period they vest.

An award of restricted stock consists of a specified number of shares of our common stock that are, or may be, subject to restrictions, forfeiture conditions, and any other terms and conditions for periods determined by the Committee. The Compensation Committee has discretion to determine the terms of any award of restricted stock, including the number of shares subject to the award, and the minimum period over which the award may vest, and the acceleration of any vesting in the event of death, disability or change of control. RSAs are not transferable or assignable unless provided otherwise by the Compensation Committee with respect to certain specified family-related transfers. Unless the Committee determines otherwise, once the restricted stock vests, the shares of common stock specified in the Award will be free of restriction, subject to any applicable lock up period. Prior to the termination of the restrictions under a RSA, a participant may vote and receive dividends on the restricted stock unless the Committee determines otherwise, but may not sell or otherwise transfer the shares until such time as the restrictions of the award have been satisfied. Compensation expense for restricted stock awards is recognized over the period they vest.

An award of restricted stock rights entitles a participant to receive a specified number of shares of our common stock that are, or may be, subject to restrictions, forfeiture conditions, and any other terms and conditions for periods determined by the Committee. It may also include the right to dividend equivalents if and as so determined by the committee. The Compensation Committee has discretion to determine the terms of any award of restricted stock or RSRs, including the number of shares subject to the award, and the minimum period over which the award may vest, and the acceleration of any vesting in the event of death, disability or change of control. RSRs are not transferable or assignable unless provided otherwise by the Compensation Committee with respect to certain specified family-related transfers. Unless the committee determines otherwise, once a RSR vests, the shares of common stock specified in the award will be issued to the participant. A participant who has been awarded RSRs may not vote the shares of common stock subject to the rights until the shares are issued. Until the vesting period applicable to a RSRs award expires and the shares are issued, the participant also may not transfer or encumber any interest in the RSRs or in any related dividend equivalents. Compensation expense for restricted stock rights is recognized over the period they vest.

The Compensation Committee may also make stock awards of common stock without restrictions, except that if the award is in lieu of salary, service fee, cash bonus or other cash compensation, the number of shares covered by an award shall be based on the fair market value of such shares on the date of grant. Common Stock Awards under the plan may be issued free of restriction and may vest immediately; however, the Committee may impose vesting and other restrictions related to the grant of such common stock awards. Compensation expense for common stock awards is recognized over the period they vest, although generally the awards vest immediately.

The following is a summary of the number and type of awards granted to, or exercised or forfeited by, employees, non-employee members of the Board of Directors and consultants pursuant to the Company's 2009 Stock Compensation Plan for the six months ended June 30, 2013:

Fiscal Year and Activity	Weighted-Average Grant or Exercise Price Per Share	Number of Shares
Reserved for future issuance as of December 31, 2012		6,668,333
Fiscal 2013 activity:		
Common stock awards	$ 0.03	5,333,333
Restricted stock awards	-	-
Restricted stock rights	-	-
Non-qualified stock options	-	-
Issued during 2013	0.03	5,333,333
Reserved for future issuance as of June 30, 2013		1,335,000
Stock options or restricted stock rights outstanding		-

Stock Issued under the 2009 Plan

In March 2013, an employee converted $25,001 of accrued wages for 833,333 shares of common stock. The shares were issued under the 2009 Stock Compensation Plan. Common stock was increased by $834 for the par value of the shares, and paid-in capital was increased by $24,167.

In January 2013, the Company issued 4,500,000 shares of common stock to three of its named executives, which vest 50% three months from the date of issuance and 50% upon six months from date of issuance. The shares were issued under the 2009 Stock Compensation Plan in consideration for the continued deferral of salaries during 2012 and 2013 to-date, as well as for the incentive for ongoing contributions in moving our product development efforts forward. Our Compensation Committee, under the direction of the Board of Directors, administers the 2009 Plan based on the above factors, and the Board approved the grant of stock options to all current employees, including its named executives. Common stock was increased by $4,500 for the par value of the shares, paid-in capital was increased by $130,500, and $135,000 was recorded as deferred stock compensation. During the six months ended June 30, 2013, $146,250 was expensed as stock compensation, and an aggregate of $41,250 was recorded for the revaluation of such shares outstanding at each period end until fully vested.

Property and Equipment

Property and equipment are carried at cost less accumulated depreciation. For financial statement purposes, depreciation is provided on the straight-line method over the estimated useful life of the asset ranging from 3 to 10 years.

Asset (Useful Life)	(Unaudited) June 30, 2013	December 31, 2012
Software (3 years)	$ 84,224	$ 84,224
Computer equipment (3 to 5 years)	329,861	329,861
Furniture and fixtures (7 to 10 years)	231,033	323,639
Equipment (7 to 10 years)	80,727	80,727
	725,845	818,451
Less accumulated depreciation	651,219	702,316
Equipment, net	$ 74,626	$ 116,135

Depreciation expense for property and equipment was $20,913 and $32,907 in the six months ended June 30, 2013 and 2012, respectively, and is reflected in selling, general and administrative expenses in the accompanying condensed consolidated statements of operations. The Company sold furniture in March 2013 for $28,934, which had a net book value of $20,596 and resulted in a gain from the sale of fixed assets of $8,338.

Goodwill and Other Intangible Assets

Intangible Assets – Intangible assets consist of acquired software and patents. Under ASC 350, "Goodwill and Other Intangible Assets," such assets acquired including software technology is considered to have a finite life. Management has estimated the useful

life of acquired software technology to be 5 years and amortized such costs on a straight-line basis over this period. In addition, ASC 985-20, "Accounting for the Costs of Computer Software to Be Sold, Leased, or Otherwise Marketed," requires the Company to consider whether or not the software technology is impaired using a net realizable value analysis based on projected discounted cash flows. The Company prepared this analysis as of June 30, 2013, and concluded that the intangible assets are not impaired. Patent acquisition costs pertaining to the Company's 3i technology that covers its PinPoint™ and Signature Mapping™ intellectual property (technology not acquired through acquisition), have been capitalized as of the date incurred, and are being amortized over the 20-year legal life of the patents. The Company has been granted by the United States Patent & Trademark Office ("USPTO") six patents related to its 3i technology. The Company evaluates the periods of amortization continually to determine whether later events or circumstances require revised estimates of useful lives. The Company's intangible acquired software technology was fully amortized as of December 31, 2009. Therefore, there was no amortization costs associated with acquired software during the six months ended June 30, 2013 and 2012, respectively. Amortization expense for patent acquisition costs was $16,455 and $16,456 during the six months ended June 30, 2013 and 2012, respectively, and is reflected in selling, general and administrative expenses in the accompanying condensed consolidated statements of operations. The Company anticipates incurring additional patent acquisition costs during 2013.

	Six Months Ended June 30, 2013			
	Beginning Period Cost	Additions	Reductions	Net Book Value
Intangibles with finite lives:				
Patent acquisition costs	$ 331,163	$ 0	$ 16,455	$ 314,708

Excess of Purchase Price over Net Assets Acquired (Goodwill) – The Company follows the provisions of ASC 805-10, "Business Combinations" and ASC 350-10, "Goodwill and Other Intangible Assets." These statements establish financial accounting and reporting standards for acquired goodwill. Specifically, the standards address how acquired intangible assets should be accounted for both at the time of acquisition and after they have been recognized in the financial statements. Effective January 1, 2002, with the adoption of ASC 350-10, goodwill must be evaluated for impairment and is no longer amortized. Excess of purchase price over net assets acquired ("goodwill") represents the excess of acquisition purchase price over the fair value of the net assets acquired. To the extent possible, a portion of the excess purchase price is assigned to identifiable intangible assets. There was no goodwill on the consolidated balance sheet of the Company during Fiscal 2012 and the six months ended June 30, 2013, as a net realizable value analysis was made for goodwill in prior years and such asset was considered fully impaired during those prior years. Therefore, there was no amortization expense of goodwill during the six months ended June 30, 2013, or during the same period in 2012.

Impairment of Excess Purchase Price over Net Assets Acquired – The Company follows the provisions of ASC 350-10 "Goodwill and Other Intangible Assets" for the impairment of goodwill. The Company determines impairment by comparing the fair value of the goodwill, using the undiscounted cash flow method, with the carrying amount of that goodwill. Impairment is tested annually or whenever indicators of impairment arise. There was no goodwill on the consolidated balance sheet of the Company during Fiscal 2012 and the six months ended June 30, 2013, as a net realizable value analysis was made for goodwill in prior years and such asset was considered fully impaired during those prior years.

Impairment of Long-Lived Assets – The Company evaluates the carrying value of long-lived assets for impairment, whenever events or changes in circumstances indicate that the carrying value of an asset within the scope of ASC 360-10, "Accounting of the Impairment or Disposal of Long-Lived Assets" may not be recoverable. The Company's assessment for impairment of assets involves estimating the undiscounted cash flows expected to result from use of the asset and its eventual disposition. An impairment loss recognized is measured as the amount by which the carrying amount of the asset exceeds the fair value of the asset, and considers year-end the date for its annual impairment testing.

Recently Adopted Accounting Pronouncement

In September 2011, the Financial Accounting Standards Board ("FASB") amended its authoritative guidance related to testing goodwill for impairment. Under the revised guidance, entities testing goodwill for impairment have the option of performing a qualitative assessment before performing Step 1 of the goodwill impairment test. If entities determine, on the basis of qualitative factors, that the fair value of the reporting unit is more-likely-than-not less than the carrying amount, the two-step impairment test would be required. This guidance became effective in the beginning of the Company's fiscal 2012, and did not have a material impact on the Company's consolidated financial statements.

In June 2011, the FASB amended its authoritative guidance related to the presentation of comprehensive income, requiring entities to present items of net income and other comprehensive income either in one continuous statement or in two separate consecutive statements. This guidance also required entities to present reclassification adjustments for each component of accumulated other comprehensive income in both net income and other comprehensive income on the face of the financial statements. In December 2011, the FASB issued an update to this guidance deferring the requirement to present reclassification adjustments on the face of the financial statements. However, the Company is still required to present reclassification adjustments on either the face of the financial statement where comprehensive income is reported or disclose the reclassification adjustments in the notes to the financial statements. This guidance, including the deferral, becomes effective for the Company's fiscal 2013 first quarter, with early

adoption permitted and full retrospective application required. The guidance did not have a material impact on the Company's consolidated financial statements.

In May 2011, the FASB amended its authoritative guidance related to fair value measurements to provide a consistent definition and measurement of fair value, as well as similar disclosure requirements between U.S. GAAP and International Financial Reporting Standards ("IFRS"). This guidance clarifies the application of existing fair value measurement and expands the existing disclosure requirements. This guidance became effective in the beginning of the Company's fiscal 2012. This guidance did not have an impact on the Company's results of operations, financial position or cash flows. As a result of the adoption of this guidance, the Company did not change its valuation techniques, but may make additional disclosures as needed.

In December 2010, the FASB amended its authoritative guidance related to business combinations entered into by an entity that are material on an individual or aggregate basis. These amendments clarify existing guidance that if an entity presents comparative financial statements that include a material business combination, the entity should disclose revenue and earnings of the combined entity as though the business combination that occurred during the current year had occurred as of the beginning of the comparable prior annual reporting period. The amendments also expand the supplemental pro forma disclosures to include a description of the nature and amount of material, nonrecurring pro forma adjustments directly attributable to the business combination included in the reported pro forma revenue and earnings. This guidance became effective prospectively for business combinations for which the acquisition date is on or after the first day of the Company's fiscal 2012. This disclosure-only guidance did not have a material impact on the Company's results of operations, financial position or cash flows.

Recently Issued Accounting Pronouncement

In July 2012, the FASB amended its authoritative guidance related to testing indefinite-lived intangible assets for impairment. Under the revised guidance, entities testing their indefinite-lived intangible assets for impairment have the option of performing a qualitative assessment before performing further impairment testing. If entities determine, on the basis of qualitative factors, that it is more-likely-than-not that the asset is impaired, a quantitative test is required. The guidance becomes effective in the beginning of the Company's fiscal 2014, with early adoption permitted. The Company is currently evaluating the timing of adopting this guidance which is not expected to have an impact on the Company's consolidated financial statements.

In December 2011, the FASB issued authoritative guidance that creates new disclosure requirements about the nature of an entity's rights of offset and related arrangements associated with its financial instruments and derivative instruments. This revised guidance helps reconcile differences in the offsetting requirements under U.S. GAAP and International Financial Reporting Standards ("IFRS"). These requirements mandate that entities disclose both gross and net information about instruments and transactions eligible for offset in the statement of financial position as well as instruments and transactions subject to an agreement similar to a master netting arrangement. This disclosure-only guidance becomes effective for the Company's fiscal 2013 third quarter, with retrospective application required. The Company currently does not hold any financial or derivative instruments that are subject to an enforceable master netting arrangement. However, the Company currently utilizes the right of offset when netting certain negative cash balances in its statement of financial position. This guidance is not expected to have an impact on the Company's results of operations, financial position or cash flows, but may require certain additional disclosures if such balances are material or if the Company enters into additional arrangements that fall under the provisions of this guidance.

Other ASU's that have been issued or proposed by the FASB ASC that do not require adoption until a future date and are not expected to have a material impact on the financial statements upon adoption.

(3) Financial Condition, Going Concern Uncertainties and Events of Default

The Company, previously an operating stage company, became a development stage company on April 1, 2012, the date of inception as a development stage company for financial reporting. A development stage company, as defined by ASC-915-10 "Accounting and Reporting by Development Stage Enterprise", is an entity that devotes substantially all of its efforts to establish a business and either of the following conditions exists: 1) the principal operations have not commenced, or 2) the principal operations have commenced, but there has been no significant revenue therefrom. During the six months ended June 30, 2013, Applied Visual Sciences' revenue generating activities have not produced sufficient funds for profitable operations and we have incurred operating losses since inception. In view of these matters, realization of certain of the assets in the accompanying consolidated balance sheet is dependent upon continued operations, which in turn is dependent upon our ability to meet our financial requirements, raise additional financing on acceptable terms, and the success of future operations. Our independent registered public accounting firm's report on the consolidated financial statements included herein, and in our annual report on Form 10-K for the year ended December 31, 2012, contains an explanatory paragraph wherein they expressed an opinion that there is substantial doubt about our ability to continue as a going concern. Accordingly, careful consideration of such opinion should be given in determining whether to continue or become our stockholder.

As of June 30, 2013, we have outstanding trade and accrued payables of $1,610,339, other accrued liabilities of $108,048, and accrued salaries and related expenses due to our employees and management of $7,634,677. Also, the Company has an outstanding

noninterest-bearing loan from its Chief Executive Officer of $80,500, and $695,000 short-term notes from six investors, which has debt discount outstanding of $83.

The principal amount of our outstanding Series A Debentures of $1,688,205 became due on July 1, 2011, and such amount was not paid. Therefore, the Company may be considered in default. The debentures provide that any default in the payment of principal, which default is not cured within the five trading days of the receipt of notice of such default or ten trading days after the Company becomes aware of such default, will be deemed an event of default and may result in enforcement of the debenture holders' rights and remedies under the debentures and applicable law. We are in discussions with the debenture holders to re-negotiate the terms of the debentures, including the repayment or repurchase of the debentures and/or seek to extend their maturity date, although we have not reached any agreement with the debenture holders with regard to any such repayment, repurchase or extension. Our ability to repay or repurchase the debentures is contingent upon our ability to raise additional financing, of which there can be no assurance. Also, as a condition to any such extension, debenture holders may seek to amend or modify certain other terms of the debentures. If an event of default occurs under the debentures, the debenture holders may elect to require us to make immediate repayment of the mandatory default amount, which equals the sum of (i) the greater of either (a) 120% of the outstanding principal amount of the debentures, or (b) the outstanding principal amount unpaid divided by the conversion price on the date the mandatory default amount is either (1) demanded or otherwise due or (2) paid in full, whichever has the lower conversion price, multiplied by the variable weighted average price of the common stock on the date the mandatory default amount is either demanded or otherwise due, whichever has the higher variable weighted average price, and (ii) all other amounts, costs, expenses, and liquidated damages due under the debentures. In anticipation of such election by the debenture holders, due to the nonpayment of principal amount on the due date of July 1, 2011, we measured the mandatory default at approximately $337,641 and subsequently on each balance sheet date, which is reflected in the carrying value of the debentures and also recognized as interest expense. We remeasured the mandatory default amount as of June 30, 2013 at approximately $337,641. As of the date of this report, the debenture holders have not made an election requiring immediate repayment of the mandatory amount, although there can be no assurance they will not do so. The Company currently has insufficient funds to repay the outstanding amount in the event the debenture holders make a demand for payment.

During the six months ended June 30 2013, the Company issued promissory notes to three accredited investors in the aggregate principal amount of $135,000 ($134,775, net of commissions and expenses in the amount of $225), of which $30,000 originally matured on March 31, 2013 and was amended to mature on December 31, 2013, $3,000 matures on January 24, 2014, $2,000 matures on January 28, 2014, and $100,000 matures on September 21, 2014. The short-term notes accrue interest at a rate of 12% per annum. The Company also issued to the note holders an aggregate of 95,000 shares of common stock.

As of June 30, 2013, we had a cash balance of $9,360. Subsequently and through November 5, 2013, we issued five promissory notes to accredited investors in the aggregate principal amount of $44,500. Three of the notes accrue interest, with one note of $8,500 at a rate of 5.9% per annum, one note of $14,000 at a rate of 10% per annum, and one note of $5,000 at a rate of 12% per annum. The company issued an aggregate of 355,000 shares of common stock to three of the note holders. Management believes these funds to be insufficient to fund our operations for the next twelve months absent any cash flow from operations or funds from the sale of our equity or debt securities. Currently, we are spending or incurring (and accruing) expenses of approximately $190,000 per month on operations and the continued research and development of our 3i technologies and products, including with regard to salaries and consulting fees. Management believes that we will require an aggregate of approximately $2,280,000 to fund our operations for the next 12 months and to repay certain outstanding trade payables and accrued expenses. This assumes that holders of our outstanding debentures convert such debt into shares of our common stock or that we are able to extend the term of the debentures, of which there can be no assurance. In the event we are unable to extend the term of the debentures beyond their new maturity date, the debenture holders do not convert such debt or require payment of principal, partially convert such debt, or effect the buy-in provision related to the warrants and the debentures, we shall be required to raise additional financing. Also, this assumes that we are able to continue to defer the amounts due to our employees for accrued and unpaid salaries and that we are able to continue to extend or defer payment of certain amounts due to our trade creditors, of which there can be no assurance.

In view of our limited revenues to date, the Company has relied and continues to rely substantially upon equity and debt financing to fund its ongoing operations, including the research and development conducted in connection with its products and conversion of accounts payable for stock. The proceeds from our financings have been and continue to be insufficient to fund our operations, pay our trade payables, repay our unconverted debentures, or accrued and unpaid wages to our employees. Therefore, the debentures holders, our employees, or trade creditors may seek to enforce payment of amounts due to them, and our results of operations and financial condition could be materially and adversely affected and we may be unable to continue our operations. Also, in the event we continue to be unable to pay our employees, we may suffer further employee attrition. There can be no assurances that we will be successful in our efforts to raise any additional financing, any bank borrowing, and research or grant funding. Moreover, in view of the current market price of and limited trading volume in our stock, we may have limited or no access to the capital markets. Furthermore, under the terms of our agreements with the debenture holders, we are subject to restrictions on our ability to engage in any transactions in our securities in which the conversion, exercise or exchange rate or other price of such securities is below the current conversion price or is based upon the trading price of our securities after initial issuance or otherwise subject to re-set. In view of the foregoing, we may be required to curtail operations significantly, or obtain funds through entering into arrangements with collaborative partners or others that may require us to relinquish rights to certain of our technologies or products.

During the six months ended June 30, 2013, our total stockholders' deficit increased by $1,057,623 to $12,292,974, and our consolidated net loss for the period was $1,604,960. Notwithstanding the foregoing discussion of management's expectations regarding future cash flows, Applied Visual Sciences' insolvency continues to increase the uncertainties related to its continued existence. Both management and the Board of Directors are carefully monitoring the Company's cash flows and financial position in consideration of these increasing uncertainties and the needs of both creditors and stockholders.

(4) Stockholders' Equity

Other Common Stock Issued Including Exercises of Warrants and Options

During the six months ended June 30, 2013, the Company issued promissory notes to three accredited investors in the aggregate principal amount of $135,000 ($134,775, net of commissions and expenses in the amount of $225), of which $30,000 originally matured on March 31, 2013 and was amended to mature on December 31, 2013, $3,000 matures on January 24, 2014, $2,000 matures on January 28, 2014, and $100,000 matures on September 21, 2014. The short-term notes accrue interest at a rate of 12% per annum. The Company also issued to the note holders an aggregate of 95,000 shares of common stock. The relative fair value of the common stock of $2,850 was recorded as a discount to the notes payable and will be amortized over the term of the notes. Common stock was increased by $95 for the par value of the shares, $2,750 was applied to paid-in-capital, and $2,767 was recorded to other expense for the amortization of the debt discount during 2013.

On March 1, 2013, a company employee converted accrued and unpaid wages for an aggregate of 833,333 shares of common stock. The shares were issued under the 2009 Stock Compensation Plan. Common stock was increased by $834 for the par value of the shares, paid-in capital was increased by $24,167, and accrued wages was reduced by the fair value of the stock of $25,001.

On January 17, 2013, the Company issued 1,500,000 shares of common stock each to two executives and a consultant/director, in the aggregate amount of 4,500,000. The shares were issued under the 2009 Stock Compensation Plan. Common stock was increased by $4,500 for the par value of the shares, paid-in capital was increased by $130,500, and $135,000 was recorded as deferred stock compensation. During the six months ended June 30, 2013, $146,250 was expensed as stock compensation, and $41,250 was recorded for the revaluation of such shares outstanding at each period end until fully vested.

On January 17, 2013, the Company agreed to convert $5,150 of outstanding accrued payables and $5,500 other services to a consultant for an aggregate of 280,000 shares of common stock. The average conversion price was $0.04. Common stock was increased in the aggregate of $280 for the par value of the shares, paid-in capital was increased in the aggregate of $10,370, and accrued payables were reduced by the outstanding amount of $5,150 and $5,500 expensed to consulting stock compensation.

Other Common Stock Purchase Warrants Issued, Expired, or Forfeited

During the six months ended June 30, 2013, an aggregate of 3,702,850 common stock purchase warrants expired, of which 60,000 were warrants issued to a consultant, and 3,642,850 Class H warrants issued to an investor.

The Company has issued warrants as compensation to its note holders, placement agents and other consultants, as well as to incentivize investors in each of the Company's private placement financings. The table below shows by category, the warrants issued and outstanding at June 30, 2013.

Common Stock Purchase Warrants	Number of Warrants Outstanding and Exercisable	Date Warrants are Exercisable	Exercise Price	Date Warrants Expire
Note and debenture holders	10,000	December 2007	$ 0.70	December 2013
	18,293	February 2009	0.41	February 2014
	150,000	January 2010	0.25	January 2015
	78,750	September 2010	0.25	September 2015
	257,043			
Private placement investors	214,285	March 2008	0.75	December 2013
	2,682,553	Sept to Dec 2008	0.41	Sept to Dec 2013
	4,358,981	Jan to April 2009	0.41	Jan to April 2014
	800,000	June to July 2009	0.25	June to July 2014
	3,881,973	July to August 2009	0.25	December 2016
	2,099,007	Oct to Dec 2009	0.25	Oct to Dec 2014
	400,000	November 2009	0.25	December 2016
	800,000	March to May 2010	0.25	December 2016
	2,499,568	March to June 2010	0.25	March to June 2015

	150,752	August 2010	0.25	December 2016
	3,731,155	July to Sept 2010	0.25	July to Sept 2015
	5,301,345	Oct to Dec 2010	0.25	Oct to Dec 2015
	400,000	Nov to Dec 2010	0.50	Nov to Dec 2013
	800,000	February 2011	0.25	February 2014
	600,000	February 2011	0.25	February 2016
	88,000	October 2011	0.25	October 2014
	300,000	March 2012	0.25	March 2015
	29,107,619			
Placement agents	272,827	June 2009	0.45	June 2014
	108,000	July 2009	0.25	July 2014
	205,000	December 2009	0.28	December 2014
	72,000	February 2011	0.25	February 2016
	657,827			
Consultants	200,000	December 2009	0.25	December 2014
	63,000	June to August 2009	0.25	June to Aug 2014
	14,000	August 2010	0.28	August 2015
	14,000	September 2010	0.25	September 2015
	128,000	December 2010	0.50	December 2013
	419,000			
Total Warrants Issued/Outstanding	30,441,489			

As of June 30, 2013, approximately 11,296,906 of the above warrants may be exercised pursuant to the cashless exercise provisions of such warrants and, if so exercised, the shares may be subsequently resold under the provisions of Rule 144 under the Securities Act. Increased sales volume of the Company's common stock could cause the market price of the Company's common stock to drop.

(5) Subsequent Events

Subsequent events are reported by the Company to disclose events that have occurred after the balance sheet date, but before the financial statements are issued. Such events may be to provide additional information about conditions that existed at the date of the balance sheet, or conditions that did not exist at the balance sheet date. The Company has evaluated subsequent events through the date of this report.

On October 25, 2013, the Company issued three promissory notes to accredited investors in the aggregate principal amount of $31,000. Two of the notes mature on December 31, 2013, and one matures on October 25, 2014. One note for $8,500 is noninterest bearing, one note for $8,500 accrues interest at a rate of 5.9% per annum, and one note for $14,000 accrues interest at a rate of 10% per annum. Consideration for the noninterest bearing note was adding a cashless exercise provision to 540,000 outstanding warrants. The Company issued to two note holders an aggregate of 350,000 shares of common stock, and the relative fair value of the common stock of $28,000 will be amortized over the term of the notes.

On August 29, 2013, an abstract, presenting the results of a TBDx™ triple blind study (organism culture, molecular testing, and independent microscopist) that was completed on May 3, 2013 in Johannesburg,, South Africa, was accepted for presentation at the 2013 Late-Breaker session of the 44th World Conference on Lung Health the International Union Against Tuberculosis and Lung Disease (The Union) and the Center for Disease Control and Prevention (CDC) being held in Paris, France. The Late-Breaker session is intended to present the latest findings from new, innovative, and substantial research initiatives. Dr. Nazir Ismail, from the National Institute for Communicable Diseases, will make the presentation on November 3, 2013 of *"A novel TB diagnostic algorithm using automated microscopy achieves high sensitivity while reducing the volume of Xpert MTB/RIF testing"*.

During September 24 - 27, 2013, the Company issued two promissory notes to accredited investors in the aggregate principal amount of $13,500. The short-term notes mature on December 31, 2013. $5,000 of the notes accrues interest at a rate of 12% per annum. The Company issued to one note holder an aggregate of 5,000 shares of common stock, and the relative fair value of the common stock of $250.00 will be amortized over the term of the notes.

On September 18, 2013, a company employee converted accrued and unpaid wages for an aggregate of 500,000 shares of common stock. The shares were issued under the 2009 Stock Compensation Plan. Common stock was increased by $500 for the par value of the shares, paid-in capital was increased by $24,500, and accrued wages was reduced by the fair value of the stock of $25,000.

On August 6, 2013, a company employee converted accrued and unpaid wages for an aggregate of 500,000 shares of common stock. The shares were issued under the 2009 Stock Compensation Plan. Common stock was increased by $500 for the par value of the shares, paid-in capital was increased by $19,500, and accrued wages was reduced by the fair value of the stock of $20,000.

(6) Fair Value Measurement

The Company records its financial assets and liabilities at fair value, in accordance with ASC-820 "Fair Value Measurement", which is defined as the price that would be received to sell an asset or paid to transfer a liability, in the principal or most advantageous market for the asset or liability, in an orderly transaction between market participants at the measurement date. The accounting for fair value measurements must be applied to nonfinancial assets and nonfinancial liabilities, which principally consists of assets and liabilities acquired through business combinations, goodwill, indefinite-lived intangible assets and long-lived assets for the purpose of calculating potential impairment. The Company is required to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value. The three levels of inputs that may be used to measure fair value are as follows:

Level 1: Inputs based on quoted markets prices for identical assets or liabilities in active markets at the measurement date.

Level 2: Observable inputs other than quoted prices included in Level 1, such as quoted prices for similar assets and liabilities in active markets; quoted prices for identical or similar assets and liabilities in markets that are not active; or other inputs that are observable or can be corroborated by observable market data.

Level 3: Inputs reflect management's best estimate of what market participants would use in pricing the asset or liability at the measurement date. The inputs are unobservable in the market and significant to the instrument's valuation.

The following table presents the Company's hierarchy for its financial assets and liabilities at fair value on a recurring basis as of June 30, 2013:

	Level 1	Level 2	Level 3	Total
Nonderivatives:				
Cash and cash equivalents	$ 9,360	$ -	$ -	$ 9,360
Current debt	80,500	-	-	80,500
Derivatives:				
Convertible debentures	-	-	2,025,846	2,025,846
Embedded conversion feature of debentures	-	-	540,226	540,226
Common stock issued with notes	-	-	694,856	694,856

The estimated fair value of the Company's financial instruments are as follows:

Liabilities Measured at Fair Value	Convertible Notes and Debentures, Net of Discount (1)	Embedded Conversion Feature of Debentures (2)	Common Stock Issued with Notes (3)	Total
Beginning balance as of December 31, 2012	$ 2,025,846	$ 202,585	$ 559,704	$ 2,788,135
Revaluation (gain)/loss in interest expense	-	337,641	-	337,641
Issuances, net of discount	-	-	132,150	132,150
Amortization of discount	-	-	3,063	3,063
Ending balance as of June 30, 2013	$ 2,025,846	$ 540,226	$ 694,917	$ 3,260,989
Total (gain)/loss from revaluation of derivatives and event of default included in earnings for the period and reported as an adjustment to interest	$ -	$ 337,641	$ 3,063	$ 340,704

(1) The balance as of June 30, 2013, includes $1,688,205 for the outstanding convertible debentures issued November 8, 2006 and April 12, 2007, and an additional amount of $337,641 for the event of default provision under the debentures October 15, 2010 amendment agreement.

(2) Represents the conversion feature of outstanding convertible debentures issued November 8, 2006 and April 12, 2007. The fair value of the conversion feature since May 20, 2009, the final milestone reset date of the debentures, was determined using market quotation.

(3) The balance as of June 30, 2013, includes $695,000 for outstanding short-term notes payable issued October 2011 through April 2012, less the remaining note discount of $83 for issuance of common stock to note holders as inducement for the notes. The note discount is being amortized over the life of the notes.

ITEM 2. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

General

You should read the following summary together with the more detailed information and consolidated financial statements and notes thereto and schedules appearing elsewhere in this report. Throughout this report when we refer to the "Company," "Applied Visual Sciences," "we," "our" or "us," we mean Applied Visual Sciences, Inc., and its subsidiaries.

This discussion and analysis of our financial condition and results of operations is based upon our consolidated financial statements which have been prepared in accordance with accounting principles generally accepted in the United States. The preparation of these financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenue and expenses, and related disclosure of contingent assets and liabilities. On an on-going basis, we evaluate our critical accounting policies and estimates, including those related to revenue recognition, intangible assets, and contingencies. We base our estimates on historical experience, where available, and on various other assumptions that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions and conditions.

Except for historical information, the statements and other information contained in this Management's Discussion and Analysis is forward-looking. Our actual results could differ materially from the results discussed in the forward-looking statements, which include certain risks and uncertainties. These risks and uncertainties include the rate of market development and acceptance of our "intelligent imaging informatics" ("3i™") technology (particularly for our PinPoint™ and Signature Mapping™ products), the unpredictability of our sales cycle, the limited revenues and significant operating losses generated to date, and the possibility of significant ongoing capital requirements.

Our independent registered public accounting firm's report on the consolidated financial statements included in our Annual Report Form 10-K for the year ended December 31, 2012, contains an explanatory paragraph wherein they expressed an opinion that there is substantial doubt about our ability to continue as a going concern. Accordingly, careful consideration of such opinion should be given in determining whether to continue or become our stockholder.

Overview

Applied Visual Sciences, Inc. was incorporated under the name Guardian Technologies International, Inc., in the Commonwealth of Virginia in 1989 and reincorporated in State of Delaware in February 1996. We changed our name to Applied Visual Sciences, Inc., on July 9, 2010. The Company, previously an operating stage company, became a development stage company on April 1, 2012, the date of inception as a development stage company for financial reporting. Applied Visual Sciences, Inc. and its subsidiaries are collectively referred to herein as the "Company," "Applied Visual Sciences, Inc.," "Applied Visual," "us," "we," or "our."

Applied Visual Sciences is a software technology company that designs and develops imaging informatics solutions for delivery to its target markets, aviation/homeland security and healthcare. Our two product lines are offered through our two operating subsidiaries as follows: Guardian Technologies International, Inc. for aviation/homeland security products and Signature Mapping Medical Sciences, Inc., for healthcare. On March 23, 2012, the Company established a new entity; Instasis Imaging, Inc., for the development, marketing, and sales of a suite of imaging analytic applications for the automated detection of breast cancer. We may engage in one or more acquisitions of businesses that are complementary, and may form wholly-owned subsidiaries to operate within defined vertical markets products.

The Company utilizes imaging technologies and analytics to create integrated information management technology products and services that address critical problems experienced by corporations and governmental agencies in healthcare and homeland security. Each product and service can improve the quality and response time of decision-making, organizational productivity, and efficiency within the enterprise. Our product suite integrates, streamlines, and distributes business and clinical information and images across the enterprise.

Our Business Strategy

Our strategic vision is to position our core technology as the de facto standard for digital image analysis, knowledge extraction, and detection. Our strategy is based upon the following principal objectives:

- Maintain product development and sales/marketing focus on large, underserved, and rapidly growing markets with a demonstrated need for intelligent imaging informatics.
- Leverage Applied Visual Sciences, Inc.'s technology, experienced management team, research and development infrastructure.
- Focus our talents on solving highly challenging information problems associated with digital imaging analysis.
- Establish an international market presence through the development of a significant OEM/Reseller network.

- Build and maintain a strong balance sheet to ensure the availability of capital for product development, acquisitions, and growth.
- Seek to broaden our investment appeal to large institutions.

To achieve our strategic vision, we are aware of the need to exercise the financial and operational discipline necessary to achieve the proper blend of resources, products and strategic partnerships. These efforts can accelerate our ability to develop, deploy and service a broad range of intelligent imaging informatics solutions directly to our target markets and indirectly through OEM/value added reseller ("VAR") partners. During 2013, we continued implementing changes across the spectrum of our business. We refined our marketing strategy for PinPoint™ and Signature Mapping™, and enhanced our Signature Mapping™ product offerings.

We may engage in one or more acquisitions of businesses that are complementary, and may form wholly-owned subsidiaries to operate within defined vertical markets.

Our Core Technology

Our core technology is an "intelligent imaging informatics" ("3i™") engine that is capable of extracting embedded knowledge from digital images, and has the capacity to analyze and detect image anomalies. The technology is not limited by type of digital format. It can be deployed across divergent digital sources such as still images, x-ray images, video and hyper-spectral imagery. To date, the technology has been tested in the area of threat detection for baggage scanning at airports, for bomb squad applications and the detection of tuberculosis by analyzing digital images of stained sputum slides captured through a photo microscopy system. Varying degrees of research and development have been conducted in the areas of detection for cargo scanning, people scanning, military target acquisition in a hyper-spectral environment, satellite remote sensing ground surveys and mammography CAD products and radiologists' diagnostic imaging tools, and while product development in these areas is ongoing, there can be no assurance that we will successfully develop product offerings in these areas.

We are currently focused on providing software technology solutions and services in two primary markets - aviation/homeland security with PinPoint™ and healthcare technology with Signature Mapping™ solutions. However, as new or enhanced solutions are developed, we expect to expand into other markets such as military and defense utilizing hyper-spectral technology, and imaging diagnostics for the medical industry.

Patents and Proprietary Rights

We rely on a combination of common law trademark, service mark, copyright and trade secret law and contractual restrictions to establish and protect our proprietary rights and promote our reputation and the growth of our business. We do not own any patents that would prevent or inhibit our competitors from using our technology or entering our market, although we intend to seek such protection as appropriate. It is our practice to require all of our employees, consultants and independent contractors to enter into agreements containing non-disclosure, non-competition and non-solicitation restrictions and covenants, and while our agreements with some of our customers and suppliers include provisions prohibiting or restricting the disclosure of proprietary information, we can not assure you that these contractual arrangements or the other steps taken by us to protect our proprietary rights will prove sufficient protection to prevent misappropriation of our proprietary rights or to deter independent, third-party development of similar proprietary assets.

The United States Patent & Trademark Office ("USPTO") has granted the Company six patents, all of which are related to our underlying 3i™ technology. We also have nine pending patents applications (U.S. and foreign) that further cover the implementation of our core 3i™ technology. We cannot provide assurance that any or all of the remaining patent applications or provisional applications will be issued patents, or that they will not be challenged, or that rights granted to us would actually provide us with an advantage over our competitors. Prior art searches have been conducted and, based on the results of these searches; we believe that we do not infringe any third party patents identified in the searches.

Date Granted	Patent No.	Patent Description
February 17, 2009	7,492,937	System and Method for Identifying Objects of Interest in Image Data
February 24, 2009	7,496,218	System and Method for Identifying Objects of Interest in Image Data
October 19, 2010	7,817,833	System and Method for Identifying Feature of Interest in Hyperspectral Data
November 23, 2010	7,840,048	System and Method for Determining Whether There is an Anomaly in Data
March 15, 2011	7,907,762	Method of Creating a Divergence Transform for Identifying a Feature of Interest in Hyperspectral Data
October 25, 2011	8,045,805	Method for Determining Whether a Feature of Interest Anomaly is Present in an Image

Due to the rapid pace of technological change in the software industry, we believe patent, trade secret and copyright protection are less significant to our competitive edge than factors such as the knowledge, ability and experience of our personnel, new product development, frequent product enhancements, name recognition and the ongoing reliability of our products.

Aviation/Homeland Security Technology Solution - PinPoint™

Through our wholly-owned subsidiary, Guardian Technologies, we market our PinPoint™ product, which is an "intelligent imaging informatics" (3i™) technology for the detection of guns, explosives, and other threat items contained in baggage in the airport environment or for building security applications. PinPoint™ can identify threat items, notify screeners of the existence of threat items, and speed the security process by eliminating unnecessary baggage checks, provide the screener with an instantaneous second opinion, and reduce processing time spent on false positives (baggage selected for security review that contains no threat items). We market and seek to license the PinPoint™ product primarily to the United States Transportation Services Administration (TSA) for use in airports, the Federal Protection Services for use in federal buildings and to foreign governments and airport authorities. We compete with manufacturers of baggage screening, luggage and large parcel screening, people screening for weapons and explosive detection, container and vehicle screening, and cargo screening equipment and certain software companies and academic institutions that are developing solutions to detect threat items. It is also our intent to distribute the product through various distribution methods.

The market for contraband detection systems has become intensely competitive and many of our competitors are better capitalized and have greater marketing and other resources than Applied Visual Sciences, Inc. PinPoint™ continues to be developed to address the market for contraband detection. The extended alpha version of PinPoint™ has been tested successfully at live carry-on baggage checkpoints in three international airports. Integration within currently deployed manufacturers' scanning equipment is a requisite to anticipated sales, and is considered a significant development risk. PinPoint™ is available for sale to customers; however no sales are anticipated until we are able to seamlessly integrate with the manufacturers' scanning equipment.

To date the marketplace has placed a premium on the newest innovations in hardware technology and has failed to grasp how a threat detection software solution can succeed. It was expected that a major joint initiative between the Department of Homeland Security (DHS) and the National Electrical Manufacturers Association (NEMA) would open a path to both increase the interoperability of security equipment as well as provide a mechanism to use third party threat detection software as part of the screening solution. This enabling initiative is the Digital Imaging and Communications in Security (DICOS) standard, similar to the Digital Imaging and Communications in Medicine (DICOM) standard. With a defined standard for the output of each screening device, complimentary automated threat detection software can be appended to any x-ray equipment. Applied Visual Sciences, Inc co-chaired one of the three NEMA working groups drafting the DICOS standard, and the DICOS standard was published in October 2010. To date DHS has not made this standard a mandatory requirement for proposals or procurements which, as a result, has not enabled third party detection software providers the ability to enter the marketplace which has given an undue advantage to the existing security equipment providers.

As highlighted below in the NEMA article, "DICOS - Homeland Security Spending Keeps on Growing" - Published by HYPE, expenditures for security solutions are increasing. Management believes Applied Visual Sciences, Inc. is well positioned to be a third party solution provider leveraging the standard output of all future security equipment procured by the US Government. "Global homeland security spending has received a major boost in light of recent international terrorist events, as countries look at new ways to thwart terrorists and secure borders. Spending in the industry is expected to triple to $178 billion by 2015. Security-related spending will include more sophisticated information technology and the protection of other vulnerable terrorist targets. With the initial focus on airport security, NEMA has stepped up its outreach to DHS and TSA. Currently developing DICOS, the new NEMA standard will capture scans of checked baggage so that scans can be read by threat detection software. The new standard will facilitate interoperability of security-imaging equipment. With DHS/TSA expected to purchase new equipment for over 400 U.S. airports, NEMA members have joined with DHS to develop the standard. Phase II of DICOS, for the testing of the new NEMA standards, began in April 2011, and NEMA has begun looking at other modalities. The security industry is looking at border, rail, seaport, industrial and nuclear plant security.

We have been involved in a number of wide ranging U.S. Government proposals since 2011. We have teamed on a few of the proposals with large, well-known defense contractors, a federally funded research laboratory and directly. The proposals were submitted to various U.S. Government agencies. Unfortunately, most of the projects were deferred due to the ongoing federal budget discussions in Congress and operational uncertainties within the funding agencies. At this point in time, we have no indication that any of these projects will be funded this fiscal year or the next budget cycle. We will continue to pursue opportunities for the deployment of our PinPoint™ product as opportunities develop. With these uncertainties and our ability to manage with limited cash resources during 2013, we have focused on the marketing and sale of our healthcare products, as better discussed below.

Healthcare Technology Solutions - Signature Mapping™

In an effort to expand upon the use of our core technology 3i™ "intelligent imaging informatics," we have modified our threat detection algorithms and quantitative imaging capabilities for use in the imaging field of diagnostic radiology and pathology. The technology is called Signature Mapping™. Our Signature Mapping™ platform technology represents the technological basis upon which our computer vision diagnostic radiology and pathology applications are being developed. Any Signature Mapping™ product introduced in the United States may be subject to Food and Drug Administration ("FDA") review and approval, including with regard to its safety and effectiveness before we may begin marketing and selling any such product in the U.S. Such approval may require us to obtain extensive data from clinical studies to demonstrate such safety or effectiveness. Within the international markets the

regulatory requirements differ, specifically in South Africa, where we have been testing our TBDx™ application for the detection of tuberculosis by analyzing digital images of auramine stained sputum slides captured through a photo microscopy system. There may be similar regulatory requirements in foreign countries in which we seek to market and sell our healthcare CAD products. As of the date of this report, we have developed and continue to develop two TB diagnostic products, TBDx™ and TBDxV™ and our SMDS™ product, an automated hardware-software laboratory solution.

Laboratory Pathology: SMDS™

Signature Mapping Detection System ("SMDS™") is an automated hardware-software laboratory solution designed to operate one or multiple infectious disease applications via multi-threaded detection algorithms. SMDS™ automation software controls every movement of the integrated hardware components from slide management to image capture. Where SMDS™ is integrated with a specific infectious disease detection application; the solution is capable of automatically analyzing each field-of-view for the presence of specific characteristics of the targeted disease. The detection algorithms will perform with high sensitivity without sacrificing specificity. The end product is a flexible; user defined diagnostic patient report that can be integrated to a laboratory information system. Standard information includes patient information, processing date, field-of-view diagnostic findings and overall case severity or diagnostic finding.

In laboratory environments that use the image capture and visualization capabilities of Signature Mapping™ without specific infectious disease algorithms or in situations where the interface of the laboratory technician with the computer-aided identification software is a desired procedure, the SMDS™ laboratory platform includes the Decision Support Quick View ("DSQV") module. DSQV has been designed for rapid review of captured images and increased speed in diagnostic decision-making. DSQV includes post-processing image tools to magnify, zoom or review images in alternative formats. Using a high-resolution touch-screen monitor and an icon-driven menu system facilitates ease of use for even the most computer challenged individuals. Signature Mapping SMDS™ includes built-in networking support to allow DICOM images to be transmitted for remote diagnosis or to be interfaced with an enterprise network.

When SMDS™ is integrated with a disease specific automated detection algorithm, such as Signature Mapping Tuberculosis Detection ("TBDx™"), the solution expands to a fully automated diagnostic system. For high volume diagnostic laboratories, automation begins with a slide loader capable of processing up to 200 slides without human intervention. At system initialization the slide loader automatically inventories every patient slide to be processed. One-by-one the slides are moved from the holding cassettes onto the automated stage of the microscope. A barcode reader collects information about the patient just prior to the slide being placed on the stage. Information captured by the barcode reader can be automatically transferred to a laboratory information system along with the captured digital images and diagnostic case findings.

Once the slide has been positioned on the microscope stage, the automation software initiates the process of focusing the microscope system to maximize the quality of images to be captured. Because the specimen on the slide may be topographical and/or the z-axis of the slide may require compensation, the automation software calculates the required adjustments to ensure high quality digital images are captured. Further, the automation software is easily configured to capture fields-of-view in any quantity using a user established pattern of image capture. The automation software can focus the microscope stage in approximately one minute and requires an additional minute per each one hundred high quality digital images to be captured.

TBDx™ - TBDxV™

The Company has developed two fully-automated, computer-vision diagnostic products for the detection of tuberculosis ("TB"). Both Signature Mapping TBDx™ for use in laboratory environments using Auramine-O staining protocols and Signature Mapping TBDxV™, a decision support visualization technology, for use in laboratory environments using Ziehl-Neelsen staining protocols can address the approximately 80 million diagnostic slides analyzed by clinical lab technicians each year. Both products are targeted to government and private institutions that diagnose tuberculosis patients.

- TBDx™ is a fully-automated hardware and software technology platform that is capable of: (i) automatically managing 1-200 slides without human intervention, (ii) digitally capturing patient information (eliminates human recordation errors), (iii) adjusting focus for variances in sputum location, quality and topology, (iv) capturing high-quality digital images (standard 100 images per slide or user-defined), (v) automated identification of *M Tuberculosis* bacilli if present, and (vi) robust user-defined reporting and communication of diagnostic results. Phase II clinical trials were undertaken and completed in South Africa during 2011. Slides used in the clinical trial were provided from the international Thibela TB Study trial conducted by The Aurum Institute for Health Research.

- TBDxV™, the precursor to TBDx™, is a fully-automated visualization technology that maintains the same slide capacity range and digital image quality as TBDx™. TBDxV™, using high-resolution touch-screen monitors, provides the microscopist with a fast, easy-to-use system for the analysis of high-quality images, thereby alleviating the tedious and error prone diagnosis using a microscope. TBDxV™ assists microscopists in decision-making, specifically on the most difficult

scanty cases, through access to advanced visualization tools. The visualization tools are applicable to both Auramine-O and Ziehl-Neelsen staining processes.

- The Company believes that the performance of both products could be further enhanced through the exploration of new staining techniques. Further, design initiatives have been discussed that would allow the products to be deployed at the point-of-care, a major strategic initiative of The World Health Organization. To advance these design ideas from concepts - to proof of concept - to working models ready for clinical evaluation, the company will need to develop strategic partnerships with academic institutions capable of providing targeted technological input and research capabilities. The company has begun the process of reaching out to academic institutions. One such potential institution is the Clinical Microbiology Laboratory at the Stanford University Medical Center. The Medical Center has extensive expertise in infectious diseases and has expressed a willingness to assist the Company in planning and executing technology research and development. A formal business relationship is under development.

- On May 2, 2013, the Company completed a triple blind study (organism culture, molecular testing, and independent microscopist) of TBDx™ in Johannesburg, South Africa of patients suspected of having tuberculosis. The evaluation took place at the National Health Laboratory Services ("NHLS") / Center for Tuberculosis. In its most thorough external evaluation of TBDx™ to-date, the Company was assisted by the National Institute for Communicable Diseases ("NICD"), who dedicated considerable staff and material resources to execute a test protocol that was approved by the London School of Tropical Medicine. During the technology evaluation, TBDx™ processed 1,249 patient slide specimens and acquired approximately 375,000 digital images. On November 3, 2013, Dr. Nazir Ismail, from the NICD, will present the clinical results publically entitled *A novel TB diagnostic algorithm using automated microscopy achieves high sensitivity while reducing the volume of Xpert MTB/RIF testing*, at the 2013 Late-Breaker session of the 44th World Conference on Lung Health the International Union Against Tuberculosis and Lung Disease (The Union) and the Center for Disease Control and Prevention (CDC) being held in Paris, France.

- On March 15, 2013, the Company completed an evaluation of TBDx™, which was in cooperation with the TB Clinical Diagnostic Research Consortium ("CDRC"), an organization funded by the National Institute for Allergy and Infectious Diseases of the National Institutes of Health and managed by Johns Hopkins University. The evaluation consisted of the company correctly identifying 60 patient slides prepared from cases gathered from the CDRC's work in Uganda. The diagnosis, unknown to the company, was independently verified by two sets of 3 microscopists in two laboratories in Uganda. The CDRC conducts feasibility studies of new diagnostic technologies. Members include the Johns Hopkins University; Imperial College of London in the United Kingdom; Infectious Diseases Institute in Kampala, Uganda; Boston Medical Center, University of Cape Town, South Africa; Universidade Federal do Espirito Santo in Vitoria, Brazil; University of Medicine and Dentistry of New Jersey – New Jersey Medical School; National Masan Tuberculosis Hospital-Yonsei University College of Medicine in the Republic of Korea; Foundation for Innovative New Diagnostics (FIND), and Westat Inc.

- The Joint Clinical Research Center in Kampala, Uganda has approved a research protocol for the evaluation of the TBDx™ technology. It is likely that the evaluation will begin during the 4th quarter of 2013.

- Dr. Luis Cuevas of the Liverpool School of Tropical Medicine has receive funding from the European and Developing Countries Clinical Trials Partnership (EDCTP) to conduct a tuberculosis research project in Abuja, Nigeria, and a portion of this project funding will be used to evaluate the TBDx™ technology. A protocol for the evaluation has been approved and finalized. It is expected that the evaluation will begin during the 4th quarter 2013.

- The Company has been in contact with a Chinese Government tuberculosis hospital in Tsingtao. Preliminary protocols are being exchanged to establish R&D for TB detection under Ziehl-Neelsen staining and then to conduct a clinical blind study with the intent to evaluate the product for commercialization in China. Though a start date has not been established yet, it is expected that the evaluation will begin in 2014.

- On November 29, 2012, the Public Library of Science One ("PloS One") published the initial evaluation of TBDx™ entitled *"Proof-of-Concept" Evaluation of an Automated Sputum Smear Microscopy System for Tuberculosis Diagnosis*, which was undertaken by The Aurum Institute. PLoS One is a highly regarded and open source of scientific research in the TB community. This peer-reviewed evaluation represents the state of the TBDx™ technology development as it existed in May, 2011.

- On November 14, 2012, Dr. David Clark, Deputy CEO of The Aurum Institute, presented an update on the latest TBDx™ performance metrics and algorithm improvements during the 43rd Union World Conference on Lung Health in Kuala Lumpur, Malaysia. Dr. Clark made the poster presentation entitled *Automated TB Microscopy – Recent results and a model to increase pre-test probability to gene-based diagnostics*. Dr. Clark presented the results of recent performance testing using

multiple TBDx™ detection algorithms, and described the potential of TBDx™ to reduce laboratory costs by directing the most highly probable TB positive cases to more expensive molecular tests.

Radiology: BCDx™

The Company is adding vision to breast cancer diagnosis by developing a radiological suite of products, a breast cancer detection solution to be known as Signature Mapping™ Breast Cancer Detection ("BCDx™"). Annual estimates of breast cancer diagnostic activity within the U.S are: 35 million mammograms performed; 1.5 million biopsies performed; 87% of biopsies return a negative finding (mammogram 'false positive'); 200,000 confirmed cancer cases; and immeasurable emotional, mental, and physical pain for the individuals and families of biopsy patients. The 1.3 million biopsies undertaken that resulted in negative findings can be directly attributed to an inability to resolve areas of concern due to the limited information provided in the mammography images. In addition, approximately 10% of cancerous lesions are missed – partly due to dense tissue obscuring the cancer or the appearance of cancer having common characteristics with the appearance of normal tissue. The goal of BCDx™ is to deliver sophisticated image analysis processes that provide enhanced visualization capabilities and automated detection algorithms to help prevent unnecessary biopsies, while flagging previously unseen lesions for additional review.

Similar to a person's fingerprint, each tissue has a unique structure. Each structure creates a unique pattern or "signature" that can be extracted from an image to differentiate, locate, identify, and classify by using our Signature Mapping™ technology. Management anticipates BCDx™ to further help radiologists by visualizing the various structures within a particular tissue so they can be examined and quantified. This capability is expected to provide a next-generation image analysis, clarification, visualization and Signature Mapped™ "tissue characterization" and detection. Management believes that it will add significant clinical value to a wide range of difficult to detect diseases in diagnostic radiology by distinguishing and characterizing different tissue types in images regardless of the modality that generated the image.

Based on its unique properties, Signature Mapping™ is expected to be capable of being used to analyze images generated across all imaging modalities without the need for new image capture hardware costs. It will serve as a software-based, multi-modality approach to image analysis when combined with Signature Mapping's™ unique" tissue characterization" and detection. As a result, Signature Mapping™ is expected to differentiate the contrast resolution between different tissue types, even when the material or tissue in the image is very diffuse or obscured by other objects, such as is the case where diseased lung tissue is located behind a rib in an x-ray chest examination. It is capable of displaying these 'signatures' in a way that empowers radiologists to make a more informed and confident diagnosis, even for hard to distinguish structures such as masses in dense breast tissue.

Signature Mapping™ appears to provide advantages for providing the knowledge for automatic detection. The development of a "tissue characterization" and detection model employs the use of supervised machine learning and contextual image analysis to analyze and classify the features associated with the newly created "signatures." The fusion of these three technologies is known as Applied Visual Sciences, Inc.'s Intelligent Imaging Informatics 3i™. Unlike other pattern recognition methodologies, the 3i™ solution can reveal and differentiate inherent structures for all materials in an image regardless of: the imaging modality used to create the image, location within the image, shape or texture, and object orientation even if obscured by its relationship to other materials.

The Company has been engaged in discussions, negotiations, and due diligence on the formation of a strategic partnership focused exclusively on breast cancer computer vision detection technology. Our subsidiary, Instasis Imaging, would license Applied Visual's core analysis technology platform for research and development, as well as for inclusion in the diagnostic products to be commercialized. Applied Visual would contribute its intellectual property, including patents, which are specific to the area of breast cancer detection. In support of such negotiations, the Company paid a $400,000 non-refundable formation fee, of which $300,000 was paid in October 2011, and $100,000 in January 2012. The formation fee was funded by promissory notes with interest at a rate of twelve percent (12%) per annum, which have been extended as indicated above. There can be no assurances that we will be successful in our efforts to establish a strategic partnership.

Clinical Experience and Medical Accomplishments

While Signature Mapping™ is expected to be capable of use in a wide range of medical image analysis applications, our initial application product development efforts are focused in four areas:

- detection of tuberculosis by analyzing digital images of stained sputum slides captured through a photo microscopy system;
- breast cancer detection using x-ray mammography, MRI and ultrasound;
- neurological imaging analysis through the detection and quantification of acute intracranial hemorrhage using non-contrast CT, normal pressure hydrocephalus,
- multiple sclerosis using MRI; and
- chest radiography targeted at tuberculosis and silicosis detection using digital x-ray.

Laboratory Pathology: TBDx™

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In 2011, the Company completed its initial two phase clinical evaluation of Signature Mapping™ Tuberculosis Detection ("TBDx™") product - an automated tuberculosis detection sputum smear microscopy system, took place in cooperation with the South African National Health Laboratory Services ("NHLS") and the Aurum Institute for Health Research. Principal investigators included, James J. Lewis, Violet N. Chihota, Minty van der Meulen, Bernard Fourie, Gerrit Coetzee, Katherine L. Fielding, Alison D. Grant, Susan E. Dorman, and Gavin J. Churchyard.

Background: Smear microscopy remains the most common method of diagnosing tuberculosis in many high-burden countries. This is despite numerous limitations, including a lack of well-trained microscopists and reduced performance resulting from the substantial work load and poor ergonomics of the process. An automated microscopy TBDx™ system has been developed that presents an innovative, multi-potential technology platform for automatically detecting TB from sputum slides. The system loads slides onto a conventional microscope, automatically focuses and digitally captures images, and then uses Signature Mapping™, a set of specially developed image-analysis algorithms, to classify slides as TB positive or negative.

Objectives: To compare the diagnostic performance of TBDx™ in identifying tuberculosis from sputum smear microscopy slides stained with Auramine to a human microscopist, and to evaluate the effect of TBDx™ on the microscopist's workload. Culture is used as the gold standard.

Methods: This study is nested within a cross-sectional study of South African gold miners with suspected pulmonary TB. All TB suspects had one sputum sample collected for smear microscopy, MGIT culture and MPB64 organism identification. All slides were read by a research and two routine microscopists, and then independently by TBDx™, each classifying slides based on the World Health Organization ("WHO") classification standard of 100 fields of view ("FoV") at 400x magnification. For slides adjudged scanty by TBDx™, the digital FoV with suspected acid-fast bacilli ("AFB") were reviewed by the research microscopist, using TBDx™ in decision support system mode (TBDx™-DSS), a mode presenting digital images of slides assisted by image enhancement tools. The diagnostic performance of three algorithms was evaluated: TBDx™ alone; TBDx™ with review of scanty positive FoV images by the microscopist (TBDx™-DSS mode); TBDx™ with research microscopist's readings substituted for slides judged by TBDx™ to be scanty positive.

Results: Of 981 participants, 269 were culture positive for Mycobacterium tuberculosis (27.4%) and 712 were culture negative (72.6%). TBDx™ alone had higher sensitivity (75.8%) than the research microscopist, but greatly reduced specificity (Table 1). TBDx™ classified 520/981 slides (53.0%) as scanty, with the majority of these slides having only 1-2 AFBs detected (371/520=71.3%). Of these, only 68/371 (18.3%) were culture positive, which was similar to TBDx™ negative slides (17.3%). Changing the algorithm to classify 0-2 AFBs on TBDx™ as negative gave improved specificity. Combining this algorithm with an image review of positive FoV on TBDx™-DSS, scanty positive (3-9 AFBs) slides gave similar performance to that of the routine microscopists and reduced the number of FoV to be read by a microscopist by 99.7%. Finally, an algorithm in which slides with 3-9 AFB on TBDx™ were replaced with the original research microscopist's read gave sensitivity of 42.0%, specificity of 99.2% and resulted in an 84.8% reduction in the number of slides to be read by the research microscopist. The negative predictive value ("NPV") for all methods was similar.

Conclusion: The automated microscopy TBDx™ system has comparable performance to routine microscopy in this study and could greatly reduce the work load of microscopists in many high-burden settings as a Decision Support System ("DSS"). Further optimization of the TBDx™ system and training of microscopists in digital microscopy is required and is ongoing. Opportunities for further research include the tuning of the present algorithms for LED-based light sources and the development of algorithms for Ziehl-Nielsen stained slides.

Table 1: performance characteristics of human microscopist versus the TBDx™ automated microscopy system, using culture as the gold standard.

Diagnostic method	Sensitivity	Specificity	PPV	NPV	FoV requiring human review
Protocol specified (0 AFB = negative; 1-9 AFB = scanty)					
Research microscopist	52.8%	98.6%	93.4%	84.7%	98,100
Consensus of two routine microscopists	48.3%	95.8%	81.3%	83.1%	196,200
TBDx™ alone	75.8%	43.5%	33.7%	82.7%	0
Algorithm optimization (0-1 AFB = negative; 2-9 AFB = scanty)					
TBDx™ alone	59.5%	71.8%	44.3%	82.4%	0
TBDx™ with research microscopist reviewing TBDx™ scanty positive FoV images (TBDx™-DSS)	56.1%	83.7%	56.6%	83.5%	847
TBDx™ with research microscopist's readings for slides judged by TBDx™ to be scanty positive	45.0%	99.2%	95.3%	82.7%	27,500
Algorithm optimization (0-2 AFB = negative; 3-9 AFB = scanty)					
TBDx™ alone	50.6%	86.1%	57.9%	82.2%	0
TBDx™ with research microscopist reviewing TBDx™ scanty positive FoV images (TBDx™-DSS)	48.0%	91.4%	67.9%	82.3%	597
TBDx™ with research microscopist's readings for slides judged by TBDx™ to be scanty positive	42.0%	99.2%	95.0%	81.9%	14,900

AFB = acid-fast bacilli; PPV = positive predictive value; NPV = negative predictive value; FoV = fields of view.
Sensitivity = measures the proportion of actual positive which are correctly identified as having that condition.
Specificity = measures the proportion of negatives which are correctly identified.

Competition: There is no current computer-aided-detection for TB sputum microscopy analysis that can be identified as competition to Signature Mapping™. Although, there are substitute technologies that compete for sputum specimen analysis, such as the Cepheid Systems GeneXpert® System, a dip-stick or biomarker approach that is considered a competitor to Signature Mapping™. Ultimately, competition to our approach will be driven by its cost per procedure, ease-of-use, sensitivity and specificity, and ability to be used by non-trained or lightly trained personnel in the point of care environment. These emerging tests are Polymerase Chain Reaction, TB Breathalyzer, Q-Beta Replicase Assay, Transcription-Medicated Amplification, Ligase Chain Reaction, Strand Displacement Amplification, Nucleic Acid Sequence-Based Amplification and Branched DNA.

Breast Cancer Detection: BCDx™

Our research to-date includes five programs and studies conducted under the direction of the Image Processing and Informatics Laboratory at the University of Southern California ("USC") using clinical data and images provided by: the Image Processing and Informatics Laboratory at USC, Howard University, and the South Florida Clinical Mammography Data Base. Competition is expected with existing computer-aided-detection ("CAD") manufactures such as iCAD, Hologic, Medipatten, Confirma, Siemens, or Carestream Health. We may partner with one or more of these existing CAD manufacturers, or with an emerging company with new technology for the CAD arena. Once our products are commercially viable, we anticipate marketing and selling our products through original equipment manufacturers ("OEM"), or system integrators.

The Disease

Breast cancer is the second leading cause of cancer deaths in women (after lung cancer) and is the most common cancer among women, excluding skin cancers, accounting for 1 of every 3 cancers diagnosed. The lifetime probability of developing invasive breast

cancer is approximately 1 in 8 (12%). Annual estimates from the American Cancer Society (ACS) indicate that 1.5 million women will develop breast cancer worldwide and 460,000 will die from the disease. In the U.S. the mortality rate is about 1 in 35 women. Ineffective workflow, poor communications and decision-support tools cost over $8.5 billion per year.

Breast imaging procedures	About 35 million screening exams
Biopsy procedures	About 1.5 million biopsies conducted
12% - 15% of biopsies are positive	168,000 detected cancers
Mortality rate	About 40,950 women
Biopsy per procedure cost	$1,000 - $3,000 dollars
Annual gross national biopsy cost	$1.5 - $4.5 billion dollars
A 10% reduction in biopsies would save approximately	$150 - $500 million dollars

Source: NIH, Annual breast exams in the U.S. 2011.

Detection

Early detection is a critical factor for controlling survival. Early detection provides increased therapeutic options and improved probability of survival. Mammography is a reliable and cost-effective screening technology. When properly conducted, mammography has been estimated to reduce breast cancer mortality by 20-30%. Currently, ductal carcinoma-in-situ (DCIS) represents 25%-30% of all reported breast cancers. Approximately 95% of all DCIS are diagnosed because radiologists identify them in mammograms. However, reading mammograms is difficult and prone to misinterpretation, subjectivity, and misreads. Studies have found that screening x-ray exams are about 80% accurate at best and that lesions are simply not detected 10% to 15% of the time. The National Cancer Institute reported that 25% of breast tumors are missed in women in their forties. (See Liu B, Z. M., Document J (2005, "Utilizing data grid architecture for the backup and recovery of clinical image data." Comput Med Imaging Graph. 29(2-3): 95-102, and National Cancer Institute, "Cancer in African American Women.")

Dense breasts pose a greater challenge to cancer detection using mammograms, especially early-stage breast cancers. Approximately 25% of women have dense breasts; thus a large number of mammograms, especially in AAW, are more difficult to clinically interpret. The risk of breast cancer associated with the highest category of density is estimated to be two to six times greater than for women with the lowest category of breast density.

Clinical Value of Signature Mapping™

On the basis of our initial studies, the signatures of malignant tumors in mammograms exhibit significant differences when compared with cysts, benign lesions, or dense breast tissue after being processed with Signature Mapping™. Measurable differences exist among different breast structures in both the spatial and frequency domains. Signatures of different tissues vary in their entropy, linearity, boundary gradients, and homogeneity. As a result, the internal structure of masses in dense breast tissue can be characterized and identified and displayed radiographically to the clinician. Signature Mapping™ is expected to visually display levels within the tumor and distortions in the breast geometry outside the tumor.

The effectiveness of these algorithms was evaluated through a pilot study conducted with the Norris Cancer Center at the University of Southern California. The study consisted of two sets of mammographic cases, a training set and a testing set. Both sets contained 40 normal and 40 confirmed solid cancer masses and were matched for levels of interpretation difficulty and patient age, variations in breast density, and types of tumors. Applied Visual used the training set for the development of its algorithms and for training the participating radiologists in the study. The test set was used in the pilot study to gain clinical feedback and determine the effectiveness of the radiologist's interpretations using Signature Mapping™. Preliminary clinical results based on the visual performance of five highly-skilled and experienced mammographers using the mammography-specific Signature Mapping™ process demonstrated improved accuracy and ease of use in the study.

Clustered micro-calcifications may be the only visually detectable manifestation of early breast cancer. Mammography is very responsive to the presence of micro-calcifications, however, the specificity of mammography remains low. Benign calcifications cannot always be distinguished from those indicating malignancy resulting in a large population of women who do not have cancer, but are subjected to biopsy. Using Signature Mapping™ we expect that the miniscule structures within micro-calcifications can be characterized and their potential for pathology identified by the radiologists.

While carcinomas are rarely found in cysts, they are difficult to accurately diagnose through the use of mammography because they cannot be distinguished from other well circumscribed solid masses unless they display several characteristic patterns of calcification. Applied Visual is optimizing Signature Mapping™ for the accurate characterization of cysts as part of ongoing development that includes an early-onset cancer detection model.

Recent Developments - Signature Mapping™

Development continues in the refinement of TBDx™ and its detection algorithms. Additional classifiers have been created to improve sensitivity, which is the measurement of correctly identifying positive cases, and specificity, which is the measurement of correctly identifying negative cases. The underlying scripting language has been re-written to enable laboratories to either use TBDx™ as a diagnostic tool or as a pre-screening technology that identifies probable candidate TB cases that are confirmed by a secondary technology. The ability to communicate to and from the camera and TBDx™ technology will permit the system to acquire a pre-set number of images, then move to another location on the slide and capture additional images. Also, the system can monitor the acquisition of the images and stop the acquisition process once the algorithms have determined that a case is severely infected. Internal testing continues to validate the progress of algorithm improvements. Sensitivity has improved to 89% and, specificity has increased to 70%. These results best illustrate how the technology can be used in tandem with a secondary diagnostic technology such as Polymerase Chain Reaction ("PCR") or molecular testing. Furthermore, significant improvements have been achieved in specificity where TBDx™ can achieve the same performance level (98%) as a microscopist, with better sensitivity (62%).

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On April 25, 2013, The Joint Clinical Research Center in Kampala, Uganda approved a research protocol for the evaluation of the TBDx™ technology. It is likely that the evaluation will begin in the 4th quarter of 2013.

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On April 26, 2012, the Company held a meeting in New Delhi, India, at the LRS Institute of Tuberculosis and Respiratory Disease to finalize the technical components and operating budget of a multi-site, nine-month project. The proposed project contains three phases: (i) clinical evaluation of TBDxV™ (tuberculosis visualization software), (ii) development of automated detection algorithms for use in Ziehl-Neelsen (ZN) laboratory settings; and, (iii) clinical evaluation of TBDx™ for the automated detection of TB in ZN stained sputum slides. The grant funding proposal was submitted to the Department of Biotechnology ("DBT") on April 30, 2012. The Company received notification that DBT and its affiliates would participate in a clinical study upon the Company funding the program. The company is working towards an equitable solution.

On March 28, 2012, the Company held a demonstration of TBDx™ at the National Health Laboratory Services ("NHLS") in Johannesburg, South Africa. The attendees included Dr. Michael Kimerling, Senior Program Officer in Tuberculosis for the Bill & Melinda Gates Foundation, Dr. Ishmail, Director of the Center for Tuberculosis (National Institute for Infectious Diseases), and Dr. David Clark, Deputy CEO of The Aurum Institute. The demonstration was at the request of Dr. Kimerling following a presentation he attended at the 2012 Conference on Retrovirals and other Opportunistic Infections ("CROI") where results of our TBDx™ clinical trial were presented. Dr. Kimerling was especially interested in the results of our recent internal testing and a presentation illustrating the per-positive case cost advantages of using TBDx™.

On March 8, 2012, Dr. Gavin Churchyard, CEO of The Aurum Institute presented the first summary analysis of our initial clinical evaluation of TBDx™ conducted in South Africa, at the 2012 Conference on Retrovirals and other Opportunistic Infections held in Seattle, Washington. The presentation entitled "*Automated AFB Microscopy Substantially Reduces Microscopists Work Load*" was followed by a panel discussion on our technology and infectious diseases. The TBDx™ presentation was focused on the productivity gains to be realized as a result of automating smear microscopy and using detection algorithms to diagnose patient sputum specimens. TBDx™ automated detection increases the sensitivity of smear microscopy while reducing the reliance on human visual inspection. In a single laboratory shift, TBDx™ can handle the diagnostic workload of four microscopists while reducing errors that normally occur due to human factors. In a global environment of increasing growth in TB diagnostic needs to maintain status quo, resource challenged countries will need less capital investment to build new laboratories, with less stress on the human resource requirements for hiring, training and retaining laboratory technicians.

On February 4, 2012, Dr. Fleming Lure, VP for Signature Mapping, presented an abstract at the SPIE Medical Imaging Conference in San Diego, CA. SPIE is an international society for optics and photonics. The abstract presented by Dr. Lure is entitled "*Automated Detection Of Tuberculosis On Sputum Smeared Slides Using Stepwise Classification."*

Principal Offices

We maintain our principal office at 525K East Market Street, # 116, Leesburg, Virginia, 20176. Our telephone number in the U.S. is (703) 539-6190. Material non-public information can be found on our Internet address at www.appliedvs.com, on Facebook at https://www.facebook.com/appliedvs, and on Twitter at https://mobile.twitter.com/appliedvs. Such information on our website, Facebook and Twitter is not deemed to be part of this Annual Report on Form 10-K.

CONSOLIDATED RESULTS OF OPERATIONS

Results of Operations

Three months Ended June 30, 2013 Compared to the Three months Ended June 30, 2012

The following analysis reflects the condensed consolidated results of operations of the Company and its subsidiaries.

Net Revenues. There were no revenues for the three month period ended June 30, 2013, or for the same period in 2012.

Cost of Sales. There was no cost of sales for the three months ended June 30, 2013, and the same period in 2012.

Selling, General and Administrative Expenses. Selling, general and administrative expenses for the three months ended June 30, 2013 of $631,813, increased by $227,070 (56.1%), as compared to $404,743 for the same period in 2012. The table below details the components of selling, general and administrative expense, as well as the dollar and percentage changes for the three-month period.

	Three Months Ended June 30				Cumulative From April 1, 2012 (date of inception)
	2013	2012	$ Change	% Change	To June 30, 2013
Payroll and related costs	$ 216,445	$ 232,409	$ (15,964)	(6.9)	$ 1,195,735
Professional fees	58,966	79,541	(20,575)	(25.9)	316,034
Research and development costs	33,128	14,459	18,669	129.1	102,801
Other operating expenses	16,815	43,360	(26,545)	(61.2)	150,580
Depreciation and amortization	18,684	24,682	(5,998)	(24.3)	104,450
Stock-based compensation	287,775	10,292	277,483	2,696.1	598,628
Total	$ 631,813	$ 404,743	$ 227,070	56.1	$ 2,468,228

Payroll and related costs, which includes salaries, commissions, taxes and benefits, decreased $15,964 (6.9%). The Company currently employs five full-time and one part-time employee, compared to six full-time and one part-time employee for the same period in 2012.

Professional fees include legal, accounting, stock transfer agent, SEC filing, and general consulting fees. Professional fees decreased for the three months ended June 30, 2013 versus the same period last year by $20,575 (25.9%) due to: (i) an increase of $2,000 for

services provided for XBRL tagging required by the SEC effective June 30, 2012, (ii) an increase in immigration, patent, and other legal fees of $7,246, (iii) a decrease in general consultants, and miscellaneous services and fees of $1,988, (iv), a decrease in information technology consulting fees of $13,333, and (v) a decrease in audit fees of $14,500 due to reduced transactions.

Research and development ("R&D") costs increased for the three months ended June 30, 2013, compared to the same period last year by $18,669 (129.1%), due to focusing staff on product development activities for Signature Mapping TBDx™ and its May 2, 2013 clinical evaluation in South Africa.

Other operating expenses decreased by $26,545 (61.2%) to $16,815 for the three months ended June 30, 2013, as compared to $43,360 for the same period in 2012. The decrease is attributed to: (i) reduced press release costs of $4,631 as a result of greater use of disseminating information through the Company's website (Executive Blog), (ii) lower other administrative expenses by $4,654, and (iii) decreased rent costs of 17,260.

Depreciation and amortization expense in selling, general, and administrative for the three months ended June 30, 2013, is $18,684, compared to the same period for 2012 of $24,682, or a decrease of $5,998 (24.3%). The decrease is due to the sale of furniture in October 2012 and March 2013, which reduced the depreciable base amount.

Stock-based compensation, which represents a noncash expense category, is the amortization of the estimated fair value of stock-based compensation to employees, non-employee members of our Board of Directors, and consultants in lieu of cash compensation. During the three months ended June 30, 2013, the Company recognized an expense associated with employees, including its named executives, for stock-based compensation of $287,775, and for consultants of $0. During the same period of 2012, the Company did not recognize stock-based compensation expense for employees and directors, and recognized an expense of $10,292 for consulting services. Stock-based compensation expense for employees increased $287,775 and consultants decreased $10,292 during period in 2013.

Employee stock option expense in 2013 and 2012 represents the amortization of the Black-Scholes fair value as outlined above in accordance with ASC 718-10. ASC 718-10 requires the recognition of all share-based payments to employees or to non-employee directors, as compensation for service on the Board of Directors, as compensation expense in the consolidated financial statements. The amount of compensation is measured based on the estimated fair values of such stock-based payments on their grant dates, and is amortized over the estimated service period to vesting. Consulting expense for stock-based payments to consultants is based on the fair value of the stock-based compensation at inception and amortized over the estimated service period but, in accordance with ASC 505-50, is remeasured on each reporting date until the performance commitment is complete.

Other Income (Expense). Other income (expense) includes interest income, interest expense, and other non-operating income and expense. Net other expense for the three months ended June 30, 2013 was $287,988, compared to net other income of $39,225 for the same period last year, for an increase in other expense of $327,213 (834.2%).

There was no interest income from interest bearing accounts for the three months ended June 30, 2013, or for the same period in 2012, due to low average daily cash balances in interest bearing accounts during the periods.

For the three months ended June 30, 2013, the Company had other non-operating expense of $287,988, compared to non-operating income of $39,225 for the same period in 2012, or an increase in non-operating expense of $327,213 (834.2%). The components of non-operating expense for the second quarter of 2013 and 2012, and the variances to the same period 2012 include: (i) financing costs for commissions on short-term notes of $0 in 2013 versus $450 for the same period in 2012, or a decrease of $450 (100.0%), (ii) debt discount amortization costs in 2013 of $61 and $11,951 in 2012, or a decrease in expense of $11,890 (99.5%), (iii) interest expense in 2013 for short-term notes of $17,814, whereby $15,902 for the same period in 2012, or an increase in expense of $1,912 (12.0%), and (iv) an expense of $270,113 in 2013 for the revaluation of beneficial conversion feature of the outstanding debentures, compared to income of $67,528 in 2012, or an increase in expense of $337,641 (500.0%). Non-cash non-operating expense included above for the three months ended June 30, 2013 was $270,174, compared to non-cash non-operating income of $55,127 for the same period in 2012.

Net Income (Loss) and Net Income (Loss) per Common Share. Net loss for the three months ended June 30, 2013 was $919,801, compared to $365,518 for the same period in 2012, for an increase in net loss of $554,283 (151.6%). Net income (loss) for the Company per common share ("basic EPS") is computed by dividing net income (loss) by the weighted average number of shares outstanding. Net income (loss) per common share assuming dilution ("diluted EPS") is computed by reflecting potential dilution from contingently issuable shares (i.e. common stock purchase warrants and stock options issued and outstanding).

Reconciliation between the numerators and denominators of the basic and diluted EPS computations is as follows:

	Three Months Ended June 30	
	2013	2012
Numerator:		
Net loss	$ (919,801)	$ (365,518)
Denominator:		
Weighted average common shares outstanding - basic and diluted	101,026,612	92,555,328
Net loss per common share:		
Basic and diluted	($0.01)	$0.00

Six months Ended June 30, 2013 Compared to the Six months Ended June 30, 2012

The following analysis reflects the condensed consolidated results of operations of the Company and its subsidiaries.

***Net Revenues*.** There were no revenues for the six month period ended June 30, 2013, or for the same period in 2012.

Cost of Sales. There was no cost of sales for the six months ended June 30, 2013, and the same period in 2012.

Selling, General and Administrative Expenses. Selling, general and administrative expenses for the six months ended June 30, 2013 of $1,237,126, increased by $311,231 (33.6%), as compared to $925,895 for the same period in 2012. The table below details the components of selling, general and administrative expense, as well as the dollar and percentage changes for the six-month period.

	Six Months Ended June 30				Cumulative From April 1, 2012 (date of inception)
	2013	2012	$ Change	% Change	To June 30, 2013
Payroll and related costs	$ 477,240	$ 498,396	$ (21,156)	(4.2)	$ 1,195,735
Professional fees	125,165	256,843	(131,678)	(51.3)	316,034
Research and development costs	38,513	32,471	6,042	18.6	102,801
Other operating expenses	44,503	77,697	(33,194)	(42.7)	150,580
Depreciation and amortization	37,368	49,363	(11,995)	(24.3)	104,450
Stock-based compensation	514,337	11,125	503,212	4,523.3	598,628
Total	$ 1,237,126	$ 925,895	$ 311,231	33.6	$ 2,468,228

Payroll and related costs, which includes salaries, commissions, taxes and benefits, decreased $21,156 (4.2%). The Company currently employs five full-time and one part-time employee, compared to six full-time and one part-time employee for the same period in 2012.

Professional fees include legal, accounting, stock transfer agent, SEC filing, and general consulting fees. Professional fees decreased for the six months ended June 30, 2013 versus the same period last year by $131,678 (51.3%) due to: (i) an increase of $2,000 for services provided for XBRL tagging required by the SEC effective June 30, 2012, (ii) an increase in immigration, patent, and other legal fees of $5,084, (iii) a decrease in general consultants, and miscellaneous services and fees of $929, (iv), a decrease in information technology consulting fees of $13,333, (v) a decrease in audit fees of $24,500 due to reduced transactions, and (vi) a decrease in non-refundable formation fee of $100,000 incurred in January 2012, which is related to negotiations of a strategic partnership for BCDx™.

Research and development ("R&D") costs increased for the six months ended June 30, 2013, compared to the same period last year by $6,042 (18.6%), due to focusing staff on product development activities for Signature Mapping TBDx™ and its May 2, 2013 clinical evaluation in South Africa.

Other operating expenses decreased by $33,194 (42.7%) to $44,503 for the six months ended June 30, 2013, as compared to $77,697 for the same period in 2012. The decrease is attributed to: (i) lower other administrative expenses by $5,244, (ii) reduced press release costs of $5,340 as a result of greater use of disseminating information through the Company's website (Executive Blog), (iii) reduced travel costs of $5,604, and (iv) decrease in rent costs of 17,006.

Depreciation and amortization expense in selling, general, and administrative for the six months ended June 30, 2013, is $37,368, compared to the same period for 2012 of $49,363, or a decrease of $11,995 (24.3%). The decrease is due to the sale of furniture in October 2012 and March 2013, which reduced the depreciable base amount.

Stock-based compensation, which represents a noncash expense category, is the amortization of the estimated fair value of stock-based compensation to employees, non-employee members of our Board of Directors, and consultants in lieu of cash compensation. During the six months ended June 30, 2013, the Company recognized an expense associated with employees, including its named

executives, for stock-based compensation of $508,837, and for consultants of $5,500. During the same period of 2012, the Company did not recognize stock-based compensation expense for employees and directors, and recognized an expense of $11,125 for consulting services. Stock-based compensation expense for employees increased $508,837 and consultants decreased $5,625 during 2013.

Employee stock option expense the period in 2013 and 2012 represents the amortization of the Black-Scholes fair value as outlined above in accordance with ASC 718-10. ASC 718-10 requires the recognition of all share-based payments to employees or to non-employee directors, as compensation for service on the Board of Directors, as compensation expense in the consolidated financial statements. The amount of compensation is measured based on the estimated fair values of such stock-based payments on their grant dates, and is amortized over the estimated service period to vesting. Consulting expense for stock-based payments to consultants is based on the fair value of the stock-based compensation at inception and amortized over the estimated service period but, in accordance with ASC 505-50, is remeasured on each reporting date until the performance commitment is complete.

Other Income (Expense). Other income (expense) includes interest income, interest expense and other non-operating income and expense. Net other expense for the six months ended June 30, 2013 was $367,834, compared to $55,359 for the same period last year, for an increase in other expense of $312,475 (564.5%).

There was no interest income from interest bearing accounts for the six months ended June 30, 2013, or for the same period in 2012, due to low average daily cash balances in interest bearing accounts during the periods.

For the six months ended June 30, 2013, the Company had other non-operating expense of $367,834, compared to $55,359 for the same period in 2012, or an increase in non-operating expense of $312,475 (564.5%). The components of non-operating expense for the first six months of 2013 and 2012, and the variances to the same period of 2012 include: (i) financing costs for commissions on short-term notes of $225 in 2013 versus $2,700 for the same period in 2012, or a decrease of $2,475 (91.7%), (ii) debt discount amortization costs in 2013 of $3,063 and $21,787 in 2012, or a decrease in expense of $18,724 (85.9%), (iii) a gain from the sale of furniture of $8,338 in 2013, and no such sale of fixed assets during the same period in 2012, (iv) interest expense in 2013 for short-term notes of $35,243, whereby $30,872 for the same period in 2012, or an increase in expense of $4,371 (14.2%), (v) an expense of $337,641 in 2013 for the revaluation of beneficial conversion feature of the outstanding debentures, compared to $0 in 2012, or an increase in expense of $337,641. Non-cash non-operating expense included above for the six months ended June 30, 2013 was $340,704, compared to $24,487 for the same period in 2012.

Net Income (Loss) and Net Income (Loss) per Common Share. Net loss for the six months ended June 30, 2013 was $1,604,960, compared to $981,254 for the same period in 2012, for an increase in net loss of $623,706 (63.6%). Net income (loss) for the Company per common share ("basic EPS") is computed by dividing net income (loss) by the weighted average number of shares outstanding. Net income (loss) per common share assuming dilution ("diluted EPS") is computed by reflecting potential dilution from contingently issuable shares (i.e. common stock purchase warrants and stock options issued and outstanding).

Reconciliation between the numerators and denominators of the basic and diluted EPS computations is as follows:

	Six Months Ended June 30	
	2013	2012
Numerator:		
Net loss	$ (1,604,960)	$ (981,254)
Denominator:		
Weighted average common shares outstanding - basic and diluted	100,322,940	91,233,016
Net loss per common share:		
Basic and diluted	($0.02)	($0.01)

LIQUIDITY AND CAPITAL RESOURCES

The following table presents a summary of our net cash provided by (used in) operating, investing and financing activities:

	Six Months Ended June 30	
	2013	2012
Net cash used in operating activities	$ (149,519)	$ (165,796)
Net cash provided by (used) in investing activities	28,934	(475)
Net cash provided by financing activities	126,500	160,000
Net increase (decrease) in cash	$ 5,915	$ (6,271)

Net Cash Used in Operations

Net cash used in operating activities for the six months ended June 30, 2013, was $149,519, compared with net cash used in operating activities of $165,796 during the same period for 2012, or a decrease in the use of cash for operating activities of $16,277 (9.8%). The decrease in the use of cash is due to: (i) lower operating costs including, but not limited to a decrease in selling, general and administrative costs (other than depreciation and amortization, and stock based compensation) of $179,986 (20.8%), and an increase in non-operating expense (other than noncash items) of $4,596 (14.9%); and (ii) offset by a net increase in components of operating assets and liabilities of $159,113 (21.8%).

Net Cash Provided by (Used in) Investing Activities

Net cash provided by investing activities of $28,934 was for the sale of furniture for the six months ended June 30, 2013. This compares with net cash used for investing activities for patent costs of $475 for same period in 2012, or an increase in cash provided by investing activities of $29,409. The Company anticipates it will incur equipment costs during the current fiscal year ending December 31, 2013, as we design add-on features that extend our current products into other areas, and ongoing patent costs related to further protection of our PinPoint™ and Signature Mapping™ products.

Net Cash Provided by Financing Activities

Net proceeds from financing activities were $126,500 for the six months ended June 30, 2013, compared with $160,000 for the same period in 2012, or a decrease of $33,500 (20.9%). Of the 2013 net proceeds from financing activities, $135,000 (106.7%) was from the issuance of new short-term promissory notes, and $8,500 (6.7%) to reduce short-term note payable to an executive of the Company. The decrease in the net cash provided by financing activities of $33,500 is due to (i) a decrease in use of funds of $8,500 to reduce short-term note payable to an executive of the Company, and (ii) a decrease of $25,000 from the issuance of new equity financings. Management is seeking, and expects to continue to seek to raise additional capital through equity or debt financings or bank borrowings, including through one or more equity or debt financings or bank borrowings to fund its operations, repay or repurchase its debentures, and pay amounts due to its creditors and employees. However, there can be no assurance that the Company will be able to raise such additional equity or debt financing or obtain such bank borrowings on terms satisfactory to the Company or at all.

Cash and Cash Equivalents

Our cash and cash equivalents increased during the six months ended June 30, 2013 by $5,915, compared to a decrease in cash and cash equivalents during the same period in 2012 of $6,271. As outlined above, the increase in cash and cash equivalents for the current period in 2013 was the result of; (i) cash used in operating activities of $149,519, (ii) cash provided by investing activities of $28,934, and (iii) an increase in cash by $126,500 from financing activities. The net change in cash and cash equivalents for the six months ended June 30, 2013, as compared to the same period in 2012, was $12,186, and is the result of (i) a decrease in cash used in operating activities of $16,277 (9.8%), (ii) an increase from investing activities $29,409, and (iii) a decrease in financing activities of $33,500 (20.9%).

Working Capital Information - The following table presents a summary of our working capital at the end of each period:

Category	(unaudited) June 30, 2013	December 31, 2012
Cash and cash equivalents	$ 9,360	$ 3,445
Current assets	12,245	4,560
Current liabilities	12,694,553	11,698,331
Working capital (deficit)	$ (12,682,308)	$ (11,693,771)

As of June 30, 2013, the Company had a working capital deficit of $12,682,308, compared to $11,693,771 at December 31, 2012, or an increase in working capital deficit of $988,537 (8.5%). As of June 30, 2013, the Company had cash and cash equivalents of $9,360 as compared to $3,445 on December 31, 2012. The increase in cash and current assets of $7,685 is the net result of our operating, investing and financing activities outlined above. For 2013, current liabilities increased $996,222 (8.5%), with specific decreases in liabilities of $38,650, including (i) $5,150 for conversion of accounts payable for stock, (ii) $8,500 for reduction of note payable, related party, and $25,000 for conversion of accrued wages for stock, and specific increases in current liabilities of $1,034,872, including: (i) $35,244 in accrued interest, (ii) $44,850 in trade and accrued payables, (iii) $135,213 short-term note payable, net of debt discount, (iv) $337,641 for the revaluation of beneficial conversion feature of the outstanding debentures, and (v) $481,924 for the continued accrual of unpaid wages and related expenses for all employees.

Our revenue generating activities during the period, as in previous years, have not produced sufficient funds for profitable operations, and we have incurred operating losses since inception. Accordingly, we have continued to utilize the cash raised in our financing activities to fund our operations. In addition to raising cash through additional financing activities, we may supplement our future

working capital needs through the extension of trade payables and increases in accrued expenses. In view of these matters, realization of certain of the assets in the accompanying balance sheet is dependent upon our continued operations, which in turn is dependent upon our ability to meet our financial requirements, raise additional financing, and the success of our future operations.

Recent Financing Arrangements

2013 Short-Term Promissory Notes

During the six months ended June 30, 2013, the Company issued four promissory notes to three accredited investors in the aggregate principal amount of $135,000, ($134,775, net of commissions and expenses in the amount of $225), of which $30,000 originally matured on March 31, 2013 and was amended to mature on December 31, 2013, $3,000 matures on January 24, 2014, $2,000 matures on January 28, 2014, and $100,000 matures on September 21, 2014. The short-term notes accrue interest at a rate of 12% per annum. The Company also issued to the note holders an aggregate of 95,000 shares of common stock. The relative fair value of the common stock of $2,850 will be amortized over the term of the notes. The terms of the notes are essentially the same as the 2011 and 2012 short-term promissory notes, except for the original maturity period, the number of shares of common stock issued for each dollar of the note, or a 2% royalty payment of future TBDx™ net revenue in South Africa if such shares were not issued under the notes.

Other Liabilities

2011 – 2012 Short-Term Promissory Notes

The Company issued eight promissory notes to five accredited investors in the aggregate principal amount of $560,000. The notes accrue interest at a rate of 12% per annum. The notes have been amended to mature on December 31, 2013. The Company also issued an aggregate of 685,000 shares of common stock. The relative fair value of the common stock of $46,415 will be amortized over the term of the notes. The Company also issued 260,800 shares of common stock as compensation in connection with the financing for a fair value of $27,700. The notes may be prepaid in whole or in part at any time without premium or penalty, with all prepayments first applied to accrued interest, and then to principal payments. An event of default may occur under the notes if (i) the Company's failure to pay when due any principal or interest under the note, (ii) the material violation by the Company of any representation, warranty, covenant or agreement contained in the note, (iii) an assignment for the benefit of creditors by the Company, (iv) the application for the appointment of a receiver or liquidator for the Company or the property of the Company, or (v) any voluntary or involuntary petition in bankruptcy or any petition for relief under the federal bankruptcy code or any other state or federal law for the relief of debtors with respect to or by the Company; provided however with respect to an involuntary petition in bankruptcy, such petition has not been dismissed within thirty (30) days of the date of such petition. If an event of default occurs under the note, the note shall be in default immediately and without any notice, and the entire unpaid principal sum of the Note, together with any accrued interest, shall at the option of the holder thereof become immediately due and payable in full, in accordance with the terms of the note. Upon the occurrence of an event of default, the Company agrees to pay reasonable collection or enforcement costs and expenses, including reasonable attorneys' fees and interest from the date of the default at the rate of ten percent (10%) per annum computed on the unpaid principal balance.

2006 through 2013 Short-Term Promissory Notes, Related Party

On April 21, 2006, the Company entered into a Loan Agreement with Mr. Michael W. Trudnak, our Chairman and Chief Executive Officer pursuant to which Mr. Trudnak loaned the Company $200,000. The Company issued a non-negotiable promissory note, dated effective April 21, 2006, to Mr. Trudnak in the principal amount of $200,000. The note is unsecured, non-negotiable and non-interest bearing. The note is repayable on the earlier of (i) six months after the date of issuance, (ii) the date the Company receives aggregate proceeds from the sale of its securities after the date of the issuance of the Note in an amount exceeding $2,000,000, or (iii) the occurrence of an event of default. The following constitute an event of default under the note: (a) the failure to pay when due any principal or interest or other liability under the loan agreement or under the note; (b) the material violation by us of any representation, warranty, covenant or agreement contained in the loan agreement, the note or any other loan document or any other document or agreement to which the Company is a party to or by which the Company or any of our properties, assets or outstanding securities are bound; (c) any event or circumstance shall occur that, in the reasonable opinion of the lender, has had or could reasonably be expected to have a material adverse effect; (d) an assignment for the benefit of our creditors; (e) the application for the appointment of a receiver or liquidator for us or our property; (f) the issuance of an attachment or the entry of a judgment against us in excess of $100,000; (g) a default with respect to any other obligation due to the lender; or (h) any voluntary or involuntary petition in bankruptcy or any petition for relief under the federal bankruptcy code or any other state or federal law for the relief of debtors by or with respect to us, provided however with respect to an involuntary petition in bankruptcy, such petition has not been dismissed within 30 days of the date of such petition. In the event of the occurrence of an event of default, the loan agreement and note shall be in default immediately and without notice, and the unpaid principal amount of the loan shall, at the option of the lender, become immediately due and payable in full. The Company agreed to pay the reasonable costs of collection and enforcement, including reasonable attorneys' fees and interest from the date of default at the rate of 18% per annum. The note is not assignable by Mr. Trudnak without our prior consent. The Company may prepay the note in whole or in part upon ten days notice. On October 21, 2006, Mr. Trudnak extended the due date of the loan to December 31, 2006. Subsequently, on October 3 and October 18, 2006, Mr. Trudnak

loaned the Company $102,000 and $100,000, respectively, on substantially the same terms as the April 21, 2006 loan, except that each loan is due six months after the date thereof. Accordingly, following such additional loans, the Company owed an aggregate of approximately $402,000 to Mr. Trudnak. On November 10, 2006, Mr. Trudnak extended the due dates of such loans to May 31, 2007, except that $100,000 of the April 21, 2006, loan becomes due upon the Company raising $2,500,000 in financing after November 6, 2006, and the remaining amount of $202,000 of such loans become due upon the Company raising an aggregate of $5,000,000 in financing after November 6, 2006, and prior to May 31, 2007. Following the first closing of our Debenture and Series D Warrant financing on November 8, 2006, the Company repaid $100,000 on November 20, 2006, in principal amount of the April 1, 2006 loan, and paid an additional $100,000 to Mr. Trudnak on April 17, 2007 upon the second closing of our Debenture and Series D Warrant financing. On May 31, 2007, Mr. Trudnak extended the due dates of the remaining loans to May 31, 2008. Although, the anticipated payment of $202,000 had not been made, and Mr. Trudnak made an additional $24,000 loan to the company on June 25, 2008, and $5,000 on September 14, 2011, for cumulative loans of $231,000. The maturity date of the outstanding loans was extended to May 31, 2009, then to May 31, 2010 and June 30, 2011, and subsequently to December 31, 2011. On December 31, 2011, the outstanding loans were extended to June 30, 2012, then to December 30, 2012, and subsequently to June 30, 2013, with the current maturity date of December 31, 2013. The Company repaid an aggregate of $108,900 of the notes during 2010, repaid an aggregate $33,100 during 2011, and repaid an aggregate of $8,500 during 2013, resulting in an outstanding balance at June 30, 2013 of $80,500. The terms of the above transaction were reviewed and approved by the Company's audit committee and by the independent members of our Board of Directors.

2006 and 2007 Series A Debentures (as Amended on October 15, 2010) and Series D Common Stock Purchase Warrants

Under a securities purchase agreement, dated November 3, 2006, between the Company and certain institutional accredited investors, the Company sold an aggregate of $5,150,000 in principal amount of our Series A Debentures and Series D Common Stock Purchase Warrants to purchase an aggregate of 4,453,709 shares of our common stock. On November 8, 2006, the Company issued to the institutional investors an aggregate of $2,575,000 in principal amount of Series A Debentures and 4,453,709 Series D Warrants. On April 12, 2007, the Company issued an additional $2,575,000 in principal amount of the Series A Debentures, which followed the effectiveness of a registration statement registering the shares of our common stock underlying the Series A Debentures and Series D Warrants. Proceeds of the two offerings were used for the purpose of new personnel, research and development, registration expenses, for general working capital purposes, and repaying $200,000 in loans made to us by Mr. Michael W. Trudnak, our Chairman and CEO. The Company allocated proceeds from each closing to the embedded conversion features of the Series A Debentures and Series D Warrants that were recognizable as a liability under generally accepted accounting principles. We also issued at the first closing an aggregate of 623,520 common stock purchase warrants to the placement agent as compensation in the offering, which were upon terms substantially similar to the Series D Warrants. One-half of the Series D Warrants (2,226,854 warrants) and the placement agent warrants (311,760 warrants) became exercisable on November 8, 2006. The remaining one-half of the Series D Warrants (2,226,855 warrants) and the placement agent warrants (311,760 warrants) became exercisable on April 12, 2007. The Series D Warrants and the placement agent's warrants may be exercised via a cashless exercise if certain conditions are met. Due to milestone-related adjustments, the initial exercise price of $1.15634 may be reset and the maximum number of shares to be issued under the debentures was indeterminable as of December 31, 2007. The Company considered ASC 815-40 (formerly EITF 00-19, relating to the provisions for Accounting for Derivative Financial Instruments Indexed to, and Potentially Settled in, a Company's Own Stock), and concluded that there were insufficient shares to share settle the contracts. On April 1, 2007, due to the milestone-related provisions, the conversion price of the Series A Debentures and the exercise price of the Series D Warrants and Placement Agent's Warrants were reset to a price $0.7453 per share, to $0.6948 effective October 1, 2007, and the final milestone reset of $0.4089 effective April 1, 2008. As a result of a June 2009 financing in which the Company issued shares of common stock and warrants, the conversion price of our debentures and the exercise price of the Series D Warrants was adjusted under the anti-dilution provisions of such instruments to a price of $0.25 per share, and the number of shares underlying the Series D Warrants (including the warrants the Company issued to the placement agent in the financing) were increased by an aggregate of 2,677,417 Series D warrants. On July 10, 2007, a debenture holder exercised 864,798 Series D Warrants for 864,798 shares of common stock, and 914,798 warrants were exercised during 2010 under the cashless exercise provision for 420,166 shares of common stock. Of the remaining Series D Warrants and Placement Agent Warrants, 3,062,527 warrants expired on November 11, 2011, and 3,012,523 warrants expired on April 12, 2012.

As of June 30, 2013, an aggregate of $3,461,795 in principal amount of the Series A Debentures have been converted into 8,730,037 shares of common stock, an aggregate of $663,043 in interest amount have been converted into 2,675,576 shares of common stock, and an aggregate of 1,779,596 Series D Warrants have been exercised resulting in the issuance of 1,284,964 shares of common stock. Accordingly, as of June 30, 2013, an aggregate of $1,688,205 of principal amount of the debentures remain unconverted.

Our outstanding Series A 10% Convertible Debentures originally became due on November 7, 2008. On October 15, 2010, we entered into an agreement with our two remaining Series A Debenture holders to amend and effect a restructuring of the debentures that originally became due on November 7, 2008. Under the amendment agreement, the Company and two debenture holders agreed: (i) to an extension of the maturity date of the debentures to June 30, 2011, (ii) that the $1,688,205 of outstanding principal amount will not bear interest from July 1, 2010 through the new maturity date, (iii) that, in exchange for the payment in cash of amounts of accrued but unpaid regular interest of approximately $638,163, and waived all additional interest and late fees, liquidated damages and certain other amounts due under the debentures ("Interest and Default Amounts") the Company issued an aggregate of 2,552,653 shares of common stock, (iv) that all claims with regard to the payment of the Interest and Default Amounts and all prior events of default under

the Debentures and breaches of any covenant, agreement, term or condition ("Defaults") under our debentures and debenture transaction documents would be waived and the Company was released from any claims with respect to the Additional Interest and Late Fees of approximately $773,314, and Default Amounts of approximately $2,541,739, and prior Defaults Events, (v) to terminate the registration rights agreements between the Company and each debenture holder, and (vi) that the Company may force a conversion of the debentures if our common stock equals or exceeds certain price and volume conditions. There were no conversions of our debentures during 2013.

Under the Debenture amendment agreement, the Debenture holders agreed, commencing March 3, 2011, that the Company may force a conversion of the Debentures. Such a forced conversion may only be effected once every 90 days and the ability of the Company to force any such conversion is subject to certain equity conditions, which conditions were amended under the terms of the Debenture Amendment Agreement in accordance with the following:

- if the variable weighted average price for the Company's common stock ("VWAP") for any five consecutive trading days exceeds $0.50 and the average daily dollar trading volume for the Company's common stock during such period equals or exceeds $50,000, the Company may require a Holder to convert up to 25% of the outstanding principal amount of its Debenture on September 3, 2010, plus any liquidated damages or other amounts owing under the Debenture;
- if the VWAP for any five consecutive trading days exceeds $0.75 and the average daily dollar trading volume for the common stock during such period equals or exceeds $75,000, the Company may require a Holder to convert up to an additional 25% of the outstanding principal amount of its Debenture on September 3, 2010, plus any liquidated damages or other amounts owing under the Debenture;
- if the VWAP for any five consecutive trading days exceeds $1.00 and the average daily dollar trading volume for the common stock during such period equals or exceeds $100,000, the Company may require a Holder to convert up to 100% of the outstanding principal amount of its Debenture on September 3, 2010, plus any liquidated damages or other amounts owing under the Debenture.

The principal amount of our outstanding Series A Debentures of $1,688,205 became due on July 1, 2011, and such amount was not paid. Therefore, the Company may be considered in default. The debentures provide that any default in the payment of principal, which default is not cured within the five trading days of the receipt of notice of such default or ten trading days after the Company becomes aware of such default, will be deemed an event of default and may result in enforcement of the debenture holders' rights and remedies under the debentures and applicable law. We are in discussions with the debenture holders to re-negotiate the terms of the debentures, including the repayment or repurchase of the debentures and/or seek to extend their maturity date, although we have not reached any agreement with the debenture holders with regard to any such repayment, repurchase or extension. Our ability to repay or repurchase the debentures is contingent upon our ability to raise additional financing, of which there can be no assurance. Also, as a condition to any such extension, debenture holders may seek to amend or modify certain other terms of the debentures. If an event of default occurs under the debentures, the debenture holders may elect to require us to make immediate repayment of the mandatory default amount, which equals the sum of (i) the greater of either (a) 120% of the outstanding principal amount of the debentures, or (b) the outstanding principal amount unpaid divided by the conversion price on the date the mandatory default amount is either (1) demanded or otherwise due or (2) paid in full, whichever has the lower conversion price, multiplied by the variable weighted average price of the common stock on the date the mandatory default amount is either demanded or otherwise due, whichever has the higher variable weighted average price, and (ii) all other amounts, costs, expenses, and liquidated damages due under the debentures. In anticipation of such election by the debenture holders, due to the nonpayment of principal amount on the due date of July 1, 2011, we measured the mandatory default at approximately $337,641 and subsequently on each balance sheet date, which is reflected in the carrying value of the debentures and also recognized as interest expense. We remeasured the mandatory default amount as of June 30, 2013 at approximately $337,641. As of the date of this report, the debenture holders have not made an election requiring immediate repayment of the mandatory amount, although there can be no assurance they will not do so. The Company currently has insufficient funds to repay the outstanding amount in the event the debenture holders make a demand for payment.

Prior to the Debenture amendment agreement and absent a default, the Debentures bore interest at the rate of 10% per annum. The Debenture agreement, as amended on October 15, 2010, continues to permit the payment of interest due under the Debentures in cash or registered shares of our common stock. If we elected to pay the interest due in shares of our common stock, the number of shares to be issued in payment of interest is determined on the basis of 85% of the lesser of the daily volume weighted average price of our common stock as reported by Bloomberg LP ("VWAP") for the five trading days ending on the date that is immediately prior to (a) date the interest is due or (b) the date such shares are issued and delivered to the holder. We could pay interest in shares of our common stock only if the equity conditions, described below, have been met during the 20 consecutive trading days prior to the date the interest is due and through the date the shares are issued. The payment of interest in shares of our stock, the redemption of the Debentures and the occurrence of certain other events, was subject to a requirement that certain equity conditions ("equity conditions") were met, as follows: (i) we have honored all conversions and redemptions of a Debenture by the holder, (ii) we have paid all liquidated damages and other amounts due to the holder, (iii) the registration statement covering the resale of the shares underlying the Debentures and Series D Warrants is effective permitting a holder to utilize the registration statement to resell its shares, (iv) our stock is traded on the OTC Bulletin Board or other securities exchange and all of the shares upon conversion or exercise of the Debentures and Series D Warrants are listed for trading, (v) we have sufficient authorized but unreserved shares of our common stock to cover the issuance of the shares upon conversion or exercise of the Debentures and Series D Warrants, (vi) there is

no event of default under the Debentures, (vii) the issuance of the shares would not violate a holder's 4.99% or 9.99% ownership restriction cap, (viii) we have not made a public announcement of a pending merger, sale of all of our assets or similar transaction or a transaction in which a greater than 50% change in control of the Company may occur and the transaction has not been consummated, (ix) the holder is not in possession of material public information regarding us, and (x) the daily trading volume of our shares for 20 consecutive trading days prior to the applicable date exceeds 100,000 shares. Under the terms of the Debenture Amendment Agreement, (A) the equity condition in (iii) above was amended to provide that such condition is met if, in the alternative, the shares issuable upon conversion of the Debentures may then be resold pursuant to Rule 144 without restriction or limitation and the Company has delivered to a holder an opinion of the Company's counsel that such resale may legally be made and provided the holder has furnished a representation letter reasonable acceptable to the Company's counsel that the holder is not an "affiliate" for purposes of Rule 144; (B) the equity condition in (vi) above was amended to except an event of default that has previously been waived; and (C) the equity condition in (x) above was amended to except circumstances where another volume condition is applicable.

The Debentures contain a limitation on the amount of Debenture that may be converted at any one time in the event the holder owns beneficially more than 4.99% of our common stock without regard to the number of shares underlying the unconverted portion of the Debenture. This limitation may be waived upon 61 days' notice to us by the holder of the Debenture permitting the holder to change such limitation to 9.99%.

An event of default may occur under the Debentures if (a) the Company defaults in the payment of principal or, liquidated damages , (b) the Company fails to materially observe or perform a covenant or agreement in the Debentures, (c) a default or event of default occurs under any other transaction document related to the financing or in any other material agreement to which the Company is a party that results in a material adverse effect on the Company, (d) any representation or warranty the Company made to investors in the transaction documents related to the financing is materially untrue or incorrect, (e) a bankruptcy event occurs with regard to the Company, (f) the Company defaults on any other loan, mortgage, or credit arrangement that involves an amount greater than $150,000 and results in the obligation becoming declared due prior to the due date, (g) the Company's common stock is not eligible for quotation on the OTC Bulletin Board or other exchange on which the Company's shares are traded, (h) a transaction occurs in which the control of the Company changes, the Company effects a merger or consolidation, the Company sells substantially all of the assets, a tender offer is made for the Company's shares, the Company reclassify their shares or a compulsory share exchange, or the Company agrees to sell more than 33% of the assets, unless the Company receives the consent of holders of 67% of then outstanding principal of the Company's Debentures, (i) the Company fails to deliver certificates for shares to be issued on conversion within seven trading days, (j) the Company has a judgment against it for more than $150,000. We have agreed to compensate a holder of a Debenture in the event our transfer agent fails to deliver shares upon conversion of the Debentures within three trading days of the date of conversion, and the holder's broker is required to purchase shares of our common stock in satisfaction of a sale by a holder.

As outlined above, the Series D Warrants and placement agent warrants were exercisable at the same price as the conversion price of the debentures. If certain milestones are not met, the exercise price of such warrants may be reset. Also, the exercise price may be adjusted under anti-dilution and other price reset provisions contained in the warrants. The warrants initial exercise price of $1.15634 was reset to $0.7453 on April 1, 2007, due to the milestone-related provisions, to $0.6948 effective October 1, 2007, and the final milestone reset of $0.4089 effective April 1, 2008. As a result of a June 2009 financing, in which the Company issued shares of common stock and warrants below the then current exercise price of the Series D Warrants, the exercise price of the outstanding Series D Warrants and placement agent warrants were adjusted under the anti-dilution provisions of such instruments to a price of $0.25 per share, and the number of shares underlying the outstanding Series D Warrants and the placement agent warrants, issued under the Debenture agreement, were increased to an aggregate of 6,889,848 shares. As disclosed above, 1,779,596 Series D warrants were exercised, and the remaining 4,955,222 Series D warrants and 1,019,828 related placement agent warrants expired April 12, 2012.

The Series D Warrants contained a cashless exercise provision in the event (i) at any time after one year following the date the Series D Warrants are first exercisable there is no registration statement effective covering the resale of the shares underlying the Series D Warrants or (ii) at any time after four years following the date the Series D Warrants were issued.

The Series D Warrants contained a limitation on the amount of Series D Warrants that may be exercised at any one time in the event the holder owns beneficially more than 4.99% of our common stock without regard to the number of shares underlying the unconverted portion of the warrants. This limitation may be waived upon 61 days' notice to us by the holder of the Series D Warrants permitting the holder to change such limitation to 9.99%.

The conversion price of the Debentures and the exercise price of the Series D Warrants or the number of shares to be issued upon conversion or exercise of the Debentures and Series D Warrants are subject to adjustment in the event of a stock dividend, stock split, subdivision or combination of our shares of common stock, reclassification, sales of our securities below their then conversion or exercise price ("subsequent equity sales anti-dilution adjustment provisions"), a subsequent rights offering, or a reclassification of our shares. Also, if we effect a merger or consolidation with another company, we sell all or substantially all of our assets, a tender offer or exchange offer is made for our shares, or we effect a reclassification of our shares or a compulsory share exchange, a holder that subsequently converts its Debenture will be entitled to receive the same kind and amount of securities, cash or property as if the shares

it is entitled to receive on the conversion had been issued and outstanding on the date immediately prior to the date any such transaction occurred. Except as discussed above, no such events have occurred through the date of this report.

We were not required to make an adjustment to the conversion or exercise price or the number of shares to be issued upon conversion or exercise of the Debentures and Series D Warrants pursuant to the subsequent equity sales anti-dilution adjustment provisions related to an "exempt issuance," which is defined as: (A) any stock or options that are issued under our stock option plans or are approved by a majority of non-employee directors and issued (i) to employees, officers or directors or (ii) to consultants, but only if the amount issued to consultants does not exceed 400,000 shares in a 12 month period, (B) securities issued under the Debentures or Series D Warrants, (C) shares of common stock issued upon conversion or exercise of, or in exchange for, securities outstanding on the date we entered into the securities purchase agreement, (D) the issuance of the Midtown placement agent's warrants or the shares underlying the placement agent's warrants, or (E) the issuance of securities in an acquisition or strategic transaction approved by our disinterested directors. Under the Debenture Amendment Agreement, commencing October 15, 2010, Debenture holders agreed that an "exempt issuance" shall also include the issuance of stock or common stock equivalents authorized and approved in advance by the Company's disinterested directors at a price per share or at a conversion or exercise price per share equal to or greater than $0.25.

In connection with our Series A Debenture financing, we entered into a registration rights agreement with purchaser of our debentures pursuant to which we agreed we would use our best efforts to file a registration statement under the Securities Act within 45 days of the first closing to permit the public resale by debenture holders of the shares that may be issued upon conversion of the Debentures and upon exercise of the Series D Warrants, including the shares of our common stock underlying the Debentures to be issued at the second closing. Pursuant to the amendments we entered into with the current debenture holders on October 15, 2010, the debenture holders agreed to terminate their registration rights agreements with us. Accordingly, we are not required to register or maintain the registration of the shares underlying the Series A Debentures and Series D warrants held be such debenture holders; however, the Company was obligated under the terms of the Registration Rights Agreement that the Company entered into with each purchaser that has fully converted its Debenture. As outlined above, the related Series D Warrants that continued to be held by the debenture holders have expired.

We also granted to each purchaser of the Debentures and Series D Warrants the right to participate in any offering by us of common stock or common stock equivalents until the later of (i) 12 months after the effective date of the registration statement and (ii) the date a purchaser holds less than 20% of the principal amount of the Debenture the purchaser originally agreed to purchase, except for an exempt issuance or an underwritten public offering of our common stock. Purchasers may participate in such an offering up to the lesser of 100% of the future offering or the aggregate amount subscribed for under the securities purchase agreement by all purchasers. Although such common stock offerings have occurred, the Debenture holders have notified the Company that they do not want to participate in any future financings.

The securities purchase agreement also contained representations and warranties of both us and purchasers, conditions to closing, certain indemnification provisions, and other customary provisions. Also the Debenture Amendment Agreement amended certain provisions covering events of default under the Debentures, contained certain representations and warranties of the Company, a reaffirmation of certain of the representations and warranties in the securities purchase agreement, contained certain conditions to closing, and certain other customary provisions.

We were prohibited from effecting a reverse or forward stock split or reclassification of our common stock except as may be required to comply with the listing standards of any national securities exchange.

Midtown Partners & Co., LLC acted as placement agent for the financing pursuant to the terms of a Placement Agent Agreement, dated July 14, 2006, between us and Midtown. At the first closing, we paid or issued the following compensation to Midtown for its services as placement agent in connection with the offering: (i) sales commissions in the amount of $180,250; (ii) non-accountable expense reimbursement and legal fees of $30,000 of which $10,000 was paid prior to closing, (iii) placement agent's warrants to purchase an aggregate of 623,520 shares (one half of the placement agent warrants were exercisable on November 6, 2006 and the remaining one-half became exercisable on April 12, 2007). The second closing took place on April 12, 2007, at which time we paid the following compensation to Midtown for its services as placement agent in connection with the offering: (i) sales commissions in the amount of $180,250; (ii) non-accountable expense reimbursement and legal fees equal to 1% of the second closing or $25,750, (iii) the remaining one-half of the placement agent's warrants to purchase an aggregate of 311,760 shares. The Midtown placement agent's warrants were initially exercisable at a price of $1.15634 per share for a period of five years from the date they become exercisable, the exercise price was reset as disclosed above for the convertible debentures, contain a piggyback registration right, a cashless exercise provision and are substantially identical to the warrants issued to purchasers in the Debenture and Warrant offering. As a result of the June 2009 financing, the exercise price of the placement agent's warrants were adjusted under the anti-dilution provisions of such warrants to a price of $0.25 per share and the number of shares underlying the placement agent's warrants would be increased to an aggregate of 1,019,828 shares. As disclosed above, an aggregate of 509,914 of the placement agent warrants expired on November 8, 2011, and the remaining 509,914 of the placement agent warrants expired on April 12, 2012.

The securities, including certain securities issued to Midtown, were not registered under the Securities Act of 1933 or any state laws and may not be offered or sold in the United States absent registration or an applicable exemption from registration requirements.

Additional Capital

To the extent that additional capital is raised through the sale of our equity or equity-related securities of our subsidiaries, the issuance of our securities could result in dilution to our stockholders. Management may seek to raise additional capital through one or more equity or debt financings, or have discussions with certain investors with regard thereto. No assurance can be given that we will have access to the capital markets in the future, or that financing will be available on terms acceptable to satisfy our cash requirements, implement our business strategies, and meet the restrictive requirements of the debenture financing described above. If we are unable to access the capital markets or obtain acceptable financing, our results of operations and financial condition could be materially and adversely affected. We may be required to raise substantial additional funds through other means. We have not begun to receive material revenues from our commercial operations associated with the software products. We cannot assure our stockholders that our technology and products will be commercially accepted or that revenues will be sufficient to fund our operations. If adequate funds are not available to us, we may be required to curtail operations significantly, to obtain funds through entering into arrangements with collaborative partners, or others that may require us to relinquish rights to certain of our technologies or products.

Off-Balance Sheet Arrangements

We do not maintain any off-balance sheet arrangements, transactions, obligations or other relationships with unconsolidated entities that would be expected to have a material current or future effect upon our financial condition, or results of operations as of June 30, 2013 and December 31, 2012.

Financial Condition, Going Concern Uncertainties and Events of Default

The Company, previously an operating stage company, became a development stage company on April 1, 2012, the date of inception as a development stage company for financial reporting. A development stage company, as defined by ASC-915-10 "Accounting and Reporting by Development Stage Enterprise", is an entity that devotes substantially all of its efforts to establish a business and either of the following conditions exists: 1) the principal operations have not commenced, or 2) the principal operations have commenced, but there has been no significant revenue therefrom. During the six months ended June 30, 2013, Applied Visual Sciences' revenue generating activities have not produced sufficient funds for profitable operations and we have incurred operating losses since inception. In view of these matters, realization of certain of the assets in the accompanying consolidated balance sheet is dependent upon continued operations, which in turn is dependent upon our ability to meet our financial requirements, raise additional financing on acceptable terms, and the success of future operations. Our independent registered public accounting firm's report on the consolidated financial statements included herein, and in our Annual Report on Form 10-K for the year ended December 31, 2012, contains an explanatory paragraph wherein they expressed an opinion that there is substantial doubt about our ability to continue as a going concern. Accordingly, careful consideration of such opinion should be given in determining whether to continue or become our stockholder.

As of June 30, 2013, we have outstanding trade and accrued payables of $1,610,339, other accrued liabilities of $108,048, and accrued salaries and related expenses due to our employees and management of $7,634,677. Also, the Company has an outstanding noninterest-bearing loan from its Chief Executive Officer of $80,500, and $695,000 short-term notes from five investors, which has debt discount outstanding of $83.

The principal amount of our outstanding Series A Debentures of $1,688,205 became due on July 1, 2011, and such amount was not paid. Therefore, the Company may be considered in default. The debentures provide that any default in the payment of principal, which default is not cured within the five trading days of the receipt of notice of such default or ten trading days after the Company becomes aware of such default, will be deemed an event of default and may result in enforcement of the debenture holders' rights and remedies under the debentures and applicable law. We are in discussions with the debenture holders to re-negotiate the terms of the debentures, including the repayment or repurchase of the debentures and/or seek to extend their maturity date, although we have not reached any agreement with the debenture holders with regard to any such repayment, repurchase or extension. Our ability to repay or repurchase the debentures is contingent upon our ability to raise additional financing, of which there can be no assurance. Also, as a condition to any such extension, debenture holders may seek to amend or modify certain other terms of the debentures. If an event of default occurs under the debentures, the debenture holders may elect to require us to make immediate repayment of the mandatory default amount, which equals the sum of (i) the greater of either (a) 120% of the outstanding principal amount of the debentures, or (b) the outstanding principal amount unpaid divided by the conversion price on the date the mandatory default amount is either (1) demanded or otherwise due or (2) paid in full, whichever has the lower conversion price, multiplied by the variable weighted average price of the common stock on the date the mandatory default amount is either demanded or otherwise due, whichever has the higher variable weighted average price, and (ii) all other amounts, costs, expenses, and liquidated damages due under the debentures. In anticipation of such election by the debenture holders, due to the nonpayment of principal amount on the due date of July 1, 2011, we measured the mandatory default at approximately $337,641 and subsequently on each balance sheet date, which is reflected in the carrying value of the debentures and also recognized as interest expense. We remeasured the mandatory default amount as of June 30, 2013 at approximately $337,641. As of the date of this report, the debenture holders have not made an election requiring immediate

repayment of the mandatory amount, although there can be no assurance they will not do so. The Company currently has insufficient funds to repay the outstanding amount in the event the debenture holders make a demand for payment.

During the six months ended June 30, 2013, the Company issued promissory notes to three accredited investors in the aggregate principal amount of $135,000 ($134,775, net of commissions and expenses in the amount of $225), of which $30,000 originally matured on March 31, 2013 and was amended to mature on December 31, 2013, $3,000 matures on January 24, 2014, $2,000 matures on January 28, 2014, and $100,000 matures on September 21, 2014. The short-term notes accrue interest at a rate of 12% per annum. The Company also issued to the note holders an aggregate of 95,000 shares of common stock.

As of June 30, 2013, we had a cash balance of $9,360. Subsequently and through November 5, 2013, we issued five promissory notes to accredited investors in the aggregate principal amount of $44,500. Three of the notes accrue interest, with one note of $8,500 at a rate of 5.9% per annum, one note of $14,000 at a rate of 10% per annum, and one note of $5,000 at a rate of 12% per annum. The company issued an aggregate of 355,000 shares of common stock to three of the note holders. Management believes these funds to be insufficient to fund our operations for the next twelve months absent any cash flow from operations or funds from the sale of our equity or debt securities. Currently, we are spending or incurring (and accruing) expenses of approximately $190,000 per month on operations and the continued research and development of our 3i technologies and products, including with regard to salaries and consulting fees. Management believes that we will require an aggregate of approximately $2,280,000 to fund our operations for the next 12 months and to repay certain outstanding trade payables and accrued expenses. This assumes that holders of our outstanding debentures convert such debt into shares of our common stock or that we are able to extend the term of the debentures, of which there can be no assurance. In the event we are unable to extend the term of the debentures beyond their new maturity date, the debenture holders do not convert such debt or require payment of principal, partially convert such debt, or effect the buy-in provision related to the warrants and the debentures, we shall be required to raise additional financing. Also, this assumes that we are able to continue to defer the amounts due to our employees for accrued and unpaid salaries and that we are able to continue to extend or defer payment of certain amounts due to our trade creditors, of which there can be no assurance.

In view of our limited revenues to date, the Company has relied and continues to rely substantially upon equity and debt financing to fund its ongoing operations, including the research and development conducted in connection with its products and conversion of accounts payable for stock. The proceeds from our financings have been and continue to be insufficient to fund our operations, pay our trade payables, repay our unconverted debentures, or accrued and unpaid wages to our employees. Therefore, the debentures holders, our employees, or trade creditors may seek to enforce payment of amounts due to them, and our results of operations and financial condition could be materially and adversely affected and we may be unable to continue our operations. Also, in the event we continue to be unable to pay our employees, we may suffer further employee attrition. There can be no assurances that we will be successful in our efforts to raise any additional financing, any bank borrowing, and research or grant funding. Moreover, in view of the current market price of and limited trading volume in our stock, we may have limited or no access to the capital markets. Furthermore, under the terms of our agreements with the debenture holders, we are subject to restrictions on our ability to engage in any transactions in our securities in which the conversion, exercise or exchange rate or other price of such securities is below the current conversion price or is based upon the trading price of our securities after initial issuance or otherwise subject to re-set. In view of the foregoing, we may be required to curtail operations significantly, or obtain funds through entering into arrangements with collaborative partners or others that may require us to relinquish rights to certain of our technologies or products.

During the six months ended June 30, 2013, our total stockholders' deficit increased by $1,057,623 to $12,292,974, and our consolidated net loss for the period was $1,604,960. Notwithstanding the foregoing discussion of management's expectations regarding future cash flows, Applied Visual Sciences' insolvency continues to increase the uncertainties related to its continued existence. Both management and the Board of Directors are carefully monitoring the Company's cash flows and financial position in consideration of these increasing uncertainties and the needs of both creditors and stockholders.

Significant Accounting Policies

The preparation of the Company's financial statements requires management to make estimates, judgments, and assumptions that affect the reported amounts of assets, liabilities, revenues and expenses during the periods presented. The Company, previously an operating stage company, became a development stage company on April 1, 2012, the date of inception as a development stage company for financial reporting. A development stage company, as defined by ASC-915-10 "Accounting and Reporting by Development Stage Enterprise", is an entity that devotes substantially all of its efforts to establish a business and either of the following conditions exists: 1) the principal operations have not commenced, or 2) the principal operations have commenced, but there has been no significant revenue therefrom. For a discussion of the Company's critical accounting policies and estimates, refer to "Management's Discussion and Analysis of Financial Condition and Results of Operations" in the Company's Annual Report on Form 10-K for the year ended December 31, 2012. Except as disclosed in Part I, Item 4, Controls and Procedures of this report, and in Note 2 of our 2012 Form 10-K, there have been no material changes to these critical accounting policies that impacted the Company's reported amounts of assets, liabilities, revenues or expenses during the six-month period ended June 30, 2013.

ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISKS

Our market risk is confined to changes in foreign currency exchange rates and potentially adverse effects of differing tax structures. There were no international revenues subject to such market risks during the six-month period ended June 30, 2013. International activities were mostly from our Signature Mapping™ revenue opportunities in South Africa and India. Therefore, we may be exposed to foreign exchange rate fluctuations as the Company continues to pursue the revenue opportunities outside the United States. As exchange rates vary, results when translated may vary from expectations and adversely impact overall expected profitability. As of June 30, 2013, the Company's foreign currency exposure is related to accounts payable trade in the amount of $30,371.

ITEM 4. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

As of the end of the period covered by this Report, the Chief Executive Officer and Chief Financial Officer of the Company (the "Certifying Officers") conducted evaluations of the Company's disclosure controls and procedures. As defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (the "Exchange Act"), the term "disclosure controls and procedures" means controls and other procedures of an issuer that are designed to ensure the information required to be disclosed by the issuer in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the Securities and Exchange Commission's ("SEC") rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by an issuer in the reports that it files or submits under the Exchange Act is accumulated and communicated to the issuer's management, including the Certifying Officers, to allow timely decisions regarding required disclosure.

Based on this evaluation, and for reasons discussed below, the Certifying Officers determined that, as of the end of the period covered by this Report, the Company's disclosure controls and procedures were not effective to ensure that the information required to be disclosed by the Company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the SEC's rules and forms and to ensure that information required to be disclosed by the Company in the Reports that it files or submits under the Exchange Act is accumulated and communicated to the Company's management, including the Company's principal executive and principal financial officers, or persons performing similar functions, as appropriate, to allow timely decisions regarding disclosure. On May 13, 2013, the Company filed its December 31, 2012 Form 10-K, which was due on March 31, 2013, and the late filing of this report on Form 10-Q, which was due on August 14, 2013.

Although the Certifying Officers have determined that our disclosure controls and procedures were not effective, management continues to believe that a refinement to our disclosure controls is an ongoing process. The Audit Committee believes the Company should continue the following activities: (a) additional education and professional development for the Company's accounting and other staff on new and existing applicable SEC filing requirements, certain applicable SEC disclosure requirements, and the timing of the filing thereof, and (b) reviewing disclosure requirements, including Form 10-K and Regulation S-K disclosure requirements, SEC staff guidance and interpretations related thereof, as well as Accounting Standards Codification ("ASCs") and updates.

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Changes in Internal Controls

There were no changes in the Company's internal controls over financial reporting during the period covered by the Report that have materially affected, or are reasonably likely to materially affect, the Company's internal controls over financial reporting.

PART II. OTHER INFORMATION

ITEM 1. LEGAL PROCEEDINGS

None

ITEM 1A. RISK FACTORS

An investment in our common stock involves a high degree of risk. You should carefully consider the risks described below (which reflect changes to certain of the risk factors we disclosed in our 2012 Form 10-K) and other information contained in this Report in deciding whether to invest in our common stock, as well as certain risk factors set forth under Part I, Item 1A of our 2012 Form 10-K. Additional risks not presently known to us or which we currently consider immaterial may also adversely affect our company. If any of the following risks actually occur, our business, financial condition and operating results could be materially adversely affected. In such case, the trading price of our common stock could decline, and you could lose a part of your investment.

Risks Related to Our Company and Our Operations

We have incurred substantial debt which could affect our ability to obtain additional financing and may increase our vulnerability to business downturns. We were unable to repay our Series A Debentures when they become due.

As of June 30, 2012, the aggregate principal under our outstanding Series A Debentures was $1,688,205, which matured on June 30, 2011. We have outstanding trade and accrued payables of $1,610,339, other accrued liabilities of $108,048, and accrued salaries and related expenses due to our employees and management of $7,634,677. Also, the Company has an outstanding noninterest-bearing loan from its Chief Executive Officer of $80,500, and $695,000 short-term notes from six investors, which as of June 30, 2013, has debt discount outstanding of $83. We are subject to the risks associated with substantial indebtedness, including insufficient funds to repay the outstanding principal in the event the debenture holders make a demand for payment; it may be more expensive and difficult to obtain additional financing; and we are more vulnerable to economic downturns.

We did not make timely payment of outstanding principal when due under our Series A Debentures, and failure to make such payment is an event of default under the debentures. We have insufficient cash resources to repay the amounts due to our debenture holders.

The principal amount of our outstanding Series A Debentures of $1,688,205 became due on July 1, 2011, and such amount was not paid. Therefore, the Company may be considered in default. The debentures provide that any default in the payment of principal, which default is not cured within the five trading days of the receipt of notice of such default or ten trading days after the Company becomes aware of such default, will be deemed an event of default and may result in enforcement of the debenture holders' rights and remedies under the debentures and applicable law. We are in discussions with the debenture holders to re-negotiate the terms of the debentures, including the repayment or repurchase of the debentures and/or seek to extend their maturity date, although we have not reached any agreement with the debenture holders with regard to any such repayment, repurchase or extension. Our ability to repay or repurchase the debentures is contingent upon our ability to raise additional financing, of which there can be no assurance. Also, as a condition to any such extension, debenture holders may seek to amend or modify certain other terms of the debentures. If an event of default occurs under the debentures, the debenture holders may elect to require us to make immediate repayment of the mandatory default amount, which equals the sum of (i) the greater of either (a) 120% of the outstanding principal amount of the debentures, or (b) the outstanding principal amount unpaid divided by the conversion price on the date the mandatory default amount is either (1) demanded or otherwise due or (2) paid in full, whichever has the lower conversion price, multiplied by the variable weighted average price of the common stock on the date the mandatory default amount is either demanded or otherwise due, whichever has the higher variable weighted average price, and (ii) all other amounts, costs, expenses, and liquidated damages due under the debentures. In anticipation of such election by the debenture holders, due to the nonpayment of principal amount on the due date of July 1, 2011, we measured the mandatory default at approximately $337,641 and subsequently on each balance sheet date, which is reflected in the carrying value of the debentures and also recognized as interest expense. We remeasured the mandatory default amount as of June 30, 2013 at approximately $337,641. As of the date of this report, the debenture holders have not made an election requiring immediate repayment of the mandatory amount, although there can be no assurance they will not do so. The Company currently has insufficient funds to repay the outstanding amount in the event the debenture holders make a demand for payment.

We have a severe working capital deficit and, in addition to proceeds from financings, we continue to have outstanding loans from our chief executive officer, deferrals of salaries by our executive officers, employees and a consultant/director to indirectly continue to fund operations. In the event we are unable to pay our employees salaries, we may experience employee attrition which could materially and adversely affect our business and operations.

During the six months ended June 30, 2013, our total stockholders' deficit increased by $1,057,623 to $12,292,974, and our consolidated net loss for the period was $1,604,960. Our revenue generating activities had not produced sufficient funds for profitable operations and we have incurred operating losses since inception. Although we have obtained cash from certain financings, we continue to have outstanding loans from our chief executive officer of approximately $80,500, accrued and unpaid salaries of our executive officers in the amount of $3,809,042 and to other employees of $3,242,830, and outstanding accounts payable to a consultant/director of the Company in the amount of $745,919. The Company's insolvency continues to increase the uncertainties related to its continued existence. Also, in the event we are unable to pay our employees, we may continue to experience further employee attrition which could materially adversely affect our business and operations, including our ongoing research and development activities. As of June 30, 2013, we employed five full-time employees, and one part-time employee. We also have one employee that is on temporary leave of absence, and their return is uncertain.

Our certifying officers evaluated the effectiveness of our disclosure controls and procedures, and concluded that our disclosure controls were not effective for the period ending December 31, 2012 and the current period and that we had certain weaknesses in our internal controls over timely reporting.

Our Chief Executive Officer and Chief Financial Officer (the "Certifying Officers") are responsible for establishing and maintaining our disclosure controls and procedures (as defined in Exchange Act Rule 13a-15(e) and 15d-15(e)). The Certifying Officers designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under their supervision, to ensure that information required to be disclosed by us in the reports that we file or submit under the Exchange Act is recorded,

processed, summarized and reported, within the time periods specified by the SEC's rules and forms, and is made known to management (including the Certifying Officers) by others within the Company, including its subsidiaries. We regularly evaluate the effectiveness of our disclosure controls and procedures and report our conclusions about the effectiveness of the disclosure controls quarterly in our Forms 10-Q and annually in our Forms 10-K. In completing such reporting, we disclose, as appropriate, any significant change in our internal control over financial reporting that occurred during our most recent fiscal period that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting. As we disclosed above, On May 13, 2013, the Company filed its December 31, 2012 Form 10-K, which was due on March 31, 2013, and the late filing of this report on Form 10-Q, which was due on August 14, 2013. Our Certifying Officers concluded that our disclosure controls and procedures were not effective as of the end of the period covered by such reports. Although the Certifying Officers have determined that our disclosure controls and procedures were not effective, management continues to believe that refinement to our disclosure controls and procedures is an ongoing progress. The Audit Committee believes the Company should continue the following activities: (a) additional education and professional development for the Company's accounting and other staff on new and existing applicable SEC filing requirements, certain applicable SEC disclosure requirements, and the timing of the filing thereof, and (b) reviewing disclosure requirements, including Form 10-K and Regulation S-K disclosure requirements, SEC staff guidance and interpretations related thereto. While management is responsible for establishing and maintaining our disclosure controls and procedures and has taken steps to ensure that the disclosure controls are effective and free of "significant deficiencies" and/or "material weaknesses," the ability of management to implement the remediation of such weaknesses and deficiencies and the inherent nature of our business and rapidly changing environment may affect management's ability to be successful with this initiative.

Dilutive effect of conversion of Series A Senior Convertible Debentures, and exercise of common stock purchase warrants.

As of June 30, 2013, an aggregate of 6,752,820 of our shares are issuable upon conversion of our outstanding Series A Debentures. The Company has an aggregate of 30,441,489 of our shares issuable upon exercise of outstanding common stock purchase warrants, of which approximately 11,296,906 warrants may be exercised pursuant to the cashless exercise provisions of such warrants and may be subsequently resold as "restricted securities" under the provisions of Rule 144 under the Securities Act. Increased sales volume of the Company's common stock could cause the market price of the Company's common stock to drop. Sales of a substantial number of shares of our common stock in the public market, or the perception that these sales might occur, could depress the market price of our common stock and could impair our ability to raise capital through the sale of additional equity securities.

Our lease expired in January 2013 and was not be able to extend our existing lease, and elected not to obtain a lease for new office space because of our financial condition and limited cash resources.

The Company's office lease for our principal executive offices expired on January 31, 2013. The lease did include a renewal provision, and due to our financial condition and limited cash, the Company was not able to renew the lease, and elected to not obtain a lease for office space due to terms that are acceptable to us.

Our directors and named executive officers own a substantial percentage of our common stock.

As of August 31, 2013, our directors and executive officers beneficially owned approximately 29.4% of our shares of common stock. Accordingly, our directors, executive officers and a most highly compensated employee are entitled to cast an aggregate of 13,108,034 votes on matters submitted to our stockholders for a vote or approximately 12.9% of the total number of votes entitled to be cast at a meeting of our stockholders. These stockholders, if they acted together, could exert substantial control over matters requiring approval by our stockholders. These matters would include the election of directors and the approval of mergers or other business combination transactions. This concentration of ownership may discourage or prevent someone from acquiring our business.

ITEM 2. UNREGISTERED SALES OF EQUITY SECURITIES AND USE OF PROCEEDS

On October 25, 2013, the Company issued three promissory notes to accredited investors in the aggregate principal amount of $31,000. Two short-term notes mature on December 31, 2013, and one matures on October 25, 2014. One note for $8,500 is noninterest bearing, one note for $8,500 accrues interest at a rate of 5.9% per annum, and one note for $14,000 accrues interest at a rate of 10% per annum. Consideration for the noninterest bearing note was adding a cashless exercise provision to 540,000 outstanding warrants. The Company issued to two note holders an aggregate of 350,000 shares of common stock, and the relative fair value of the common stock of $28,000 will be amortized over the term of the notes. The common stock was issued in reliance upon the exception from the registration requirements set forth in Section 4(2) of the Securities Act and/or Rule 506 of Regulation D promulgated thereunder.

During September 24 - 27, 2013, the Company issued two promissory notes to accredited investors in the aggregate principal amount of $13,500. The short-term notes mature on December 31, 2013. $5,000 of the notes accrues interest at a rate of 12% per annum. The Company issued to one note holder an aggregate of 5,000 shares of common stock, and the relative fair value of the common stock of $250.00 will be amortized over the term of the notes. The common stock was issued in reliance upon the exception from the registration requirements set forth in Section 4(2) of the Securities Act and/or Rule 506 of Regulation D promulgated thereunder.

ITEM 3. DEFAULT UNDER OUR SERIES A DEBENTURES

The principal amount of our outstanding Series A Debentures of $1,688,205 became due on July 1, 2011, and such amount was not paid. Therefore, the Company may be considered in default. The debentures provide that any default in the payment of principal, which default is not cured within the five trading days of the receipt of notice of such default or ten trading days after the Company becomes aware of such default, will be deemed an event of default and may result in enforcement of the debenture holders' rights and remedies under the debentures and applicable law. We are in discussions with the debenture holders to re-negotiate the terms of the debentures, including the repayment or repurchase of the debentures and/or seek to extend their maturity date, although we have not reached any agreement with the debenture holders with regard to any such repayment, repurchase or extension. Our ability to repay or repurchase the debentures is contingent upon our ability to raise additional financing, of which there can be no assurance. Also, as a condition to any such extension, debenture holders may seek to amend or modify certain other terms of the debentures. If an event of default occurs under the debentures, the debenture holders may elect to require us to make immediate repayment of the mandatory default amount, which equals the sum of (i) the greater of either (a) 120% of the outstanding principal amount of the debentures, or (b) the outstanding principal amount unpaid divided by the conversion price on the date the mandatory default amount is either (1) demanded or otherwise due or (2) paid in full, whichever has the lower conversion price, multiplied by the variable weighted average price of the common stock on the date the mandatory default amount is either demanded or otherwise due, whichever has the higher variable weighted average price, and (ii) all other amounts, costs, expenses, and liquidated damages due under the debentures. In anticipation of such election by the debenture holders, due to the nonpayment of principal amount on the due date of July 1, 2011, we measured the mandatory default at approximately $337,641 and subsequently on each balance sheet date, which is reflected in the carrying value of the debentures and also recognized as interest expense. We remeasured the mandatory default amount as of June 30, 2013 at approximately $337,641. As of the date of this report, the debenture holders have not made an election requiring immediate repayment of the mandatory amount, although there can be no assurance they will not do so. The Company currently has insufficient funds to repay the outstanding amount in the event the debenture holders make a demand for payment.

ITEM 5. OTHER INFORMATION

Not Applicable

ITEM 6. INDEX TO EXHIBITS

Copies of the following documents are included as exhibits to this report pursuant to Item 601 of Regulation S-K.

APPLIED VISUAL SCIENCES, INC.

INDEX TO EXHIBITS

Exhibit Number	Description	Incorporated by Reference		Filed Herewith
		Form	Filing Date	
31.1	Certification Pursuant to Rule 13a-14(a) or 15d-14(a) of the Securities Exchange Act of 1934, As Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 (CEO)			X
31.2	Certification Pursuant to Rule 13a-14(a) or 15d-14(a) of the Securities Exchange Act of 1934, As Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 (CFO)			X
32.1	Certification Pursuant Rule 13a-14(b) or Rule 15d-14(b) and 18 U.S.C. Section 906 of the Sarbanes-Oxley Act of 2002, As Amended (CEO)			X
32.2	Certification Pursuant Rule 13a-14(b) or Rule 15d-14(b) and 18 U.S.C. Section 906 of the Sarbanes-Oxley Act of 2002, As Amended (CFO)			X
101.INS	XBRL Instance Document *			X
101.SCH	XBRL Taxonomy Extension Schema Document *			X
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document *			X
101.LAB	XBRL Taxonomy Extension Definition Linkbase Document *			X
101.PRE	XBRL Taxonomy Extension Label Linkbase Document *			X
101.DEF	XBRL Taxonomy Extension Presentation Linkbase Document *			X

* Users of this data are advised pursuant to Rule 406T of Regulation S-X that this interactive data file is deemed not filed or part of a registration statement or prospectus for the purpose of section 11 or 12 of the Securities Act of 1933, as amended, is deemed not filed for purposes of section 18 of the Securities and Exchange Act of 1934, as amended, and otherwise is not subject to liability under these sections.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the Registrant has duly caused this Report to be signed on its behalf by the undersigned, thereunto duly authorized.

APPLIED VISUAL SCIENCES, INC.

By: /s/ Michael W. Trudnak
Michael W. Trudnak
Chief Executive Officer
(Principal Executive Officer)

By: /s/ Gregory E. Hare
Gregory E. Hare
Chief Financial Officer
(Principal Financial and Accounting Officer)

Date: November 6, 2013

Exhibit 31.1

CERTIFICATION PURSUANT TO RULE 13a-14(a) OR 15d-14(a) UNDER THE SECURITIES EXCHANGE ACT OF 1934, AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002, AS AMENDED

I, Michael W. Trudnak, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Applied Visual Sciences, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal controls over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: November 6, 2013

Signed: /s/ Michael W. Trudnak
Name: Michael W. Trudnak
Title: Chairman and Chief Executive Officer

Exhibit 31.2

CERTIFICATION PURSUANT TO RULE 13a-14(a) OR 15d-14(a) UNDER THE SECURITIES EXCHANGE ACT OF 1934, AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002, AS AMENDED

I, Gregory E. Hare, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Applied Visual Sciences, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal controls over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: November 6, 2013

Signed: /s/ Gregory E. Hare
Name: Gregory E. Hare
Title: Chief Financial Officer

Exhibit 32.1

CERTIFICATION
PURSUANT TO RULE 13a-14(b) or
RULE 15d-14(b) AND 18 U.S.C. SECTION 1350
(AS ADOPTED PURSUANT TO SECTION 906 OF THE
SARBANES-OXLEY ACT OF 2002, AS AMENDED)

Pursuant to 18 U.S.C. Section 1350 (as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, as amended), the undersigned officer of Applied Visual Sciences, Inc., a Delaware corporation (the "Company"), does hereby certify, to such officer's knowledge, that:

The Quarterly Report on Form 10-Q for the quarter ended June 30, 2013 (the "Report") of the Company fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended (15 U.S.C. 78m or 78o(d), and the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: November 6, 2013

Signed: /s/ Michael W. Trudnak
Name: Michael W. Trudnak
Title: Chairman and Chief Executive Officer

Exhibit 32.2

CERTIFICATION
PURSUANT TO RULE 13a-14(b) or
RULE 15d-14(b) AND 18 U.S.C. SECTION 1350
(AS ADOPTED PURSUANT TO SECTION 906 OF THE
SARBANES-OXLEY ACT OF 2002, AS AMENDED)

Pursuant to 18 U.S.C. Section 1350 (as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, as amended), the undersigned officer of Applied Visual Sciences, Inc., a Delaware corporation (the "Company"), does hereby certify, to such officer's knowledge, that:

The Quarterly Report on Form 10-Q for the quarter ended June 30, 2013 (the "Report") of the Company fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended (15 U.S.C. 78m or 78o(d), and the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: November 6, 2013

Signed: /s/ Gregory E. Hare
Name: Gregory E. Hare
Title: Chief Financial Officer