Preliminary Findings on Computer Assisted Mass Appraisal (CAMA) Vendors Serving Washington State Counties

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WASHINGTON STATE DEPARTMENT OF REVENUE, PROPERTY TAX DIVISION

Contents

Abstract

This summary gives an overview of CAMA and CAMA-administrative software currently being used, and also software that is expected to be implemented in 2008 and 2009 in Washington State. It discusses each software vendor and the counties they serve. It includes summary statistics for counties grouped by software implemented, and details county parcels, county populations and also staff levels. The summary goes into greater detail on select vendors that provide software to the majority of counties; Manatron, TerraScan and True Automation. Information was collected from various sources and in some cases includes opinions on software performance, features and their strengths and weaknesses. This summary was written for Department of Revenue employees and also county assessors to review CAMA and CAMA-administrative software packages used by county assessors. Because various counties are expected to be changing software in the near future some of this information may already be out of date.

Notes

The term 'administrative' software in this report refers to CAMA-related administrative software.

CompuTech has declared that it will no longer service its systems in 2009. Counties using CompuTech are currently in the process of selecting replacement systems.

Manatron has indicated that it will continue to maintain their CAMA system, Sigma, but will not be offered to new counties. Currently three counties in Washington State use Sigma. John Walters, a Manatron representative, has stated that they will continue to offer Manatron Proval (CAMA software) and also Manatron Ascend (administration software). They are also offering their GRM (Government Revenue Management) to counties in Washington State, but currently no county is using this software.

General information on CAMA software and vendors

Though many CAMA software systems available throughout the US are referred to as 'canned' software packages, most vendors customize software to some extent. This is a result of differences between county governments throughout the US.

Over the last few decades there has been an explosion in software available to county governments as it relates to the assessor and treasurers offices. Initially, many software components were developed and sold separately, but over the last decade vendors have increasingly integrated assessor and administrative software needs. Below is a list of potential software components that might link or integrate with assessor's data either directly or indirectly.

- CAMA
- Valuation software (ratio and regression)
- Administrative (tax collection and calculations)
- Treasurer
- CAMA field collection software
- Sketching/drawing software
- GIS
- Planning, zoning, and building permits
- Planning, zoning, and building permits field collection software
- Cashier receipting system (building permits)
- Utilities field collection software
- Utilities billing software
- Bar-coding
- Document imaging/scanning and document management
- Payroll and human resources
- Automatic web integration
- Work flow (managing projects and manpower)

Summary information on CAMA software and vendors serving counties in Washington State

As of January 2008 there were seven vendors maintaining a total of eight CAMA software systems, and five vendors maintaining a total of five administrative software systems in Washington State. These counts do not include custom built systems. The table below lists software vendors contacted for information included in this summary. The table excludes vendors who created custom systems.

Table 1 CAMA and administrative vendors providing software to Washington State counties (not including custom built systems)

Vendor	Provides CAMA, Administrative or both	Point of contact for DOR employees	Phone	Office location closest to Washington	Website information
Colorado Customware (Real Ware)	CAMA	Ko Clifton	(800) 806-7896 ext. 19	Fort Collins, CO	http://www.coloradocustomware.com/
CompuTech	Both	Kimberly Keating	(509) 884-1542	Wenatchee, WA	http://www.compu-tech-inc.com
Eagle Computer/ Tyler Tech	Both	Mike Boots	(800) 328-0310	Renton, WA	http://www.tylertech.com/
Manatron (Ascend, Sigma Proval, GRM)	Both	Steve Strong	(800) 335-2525	Bellevue, WA	http://www.manatron.com/
Microsolve	CAMA	Jan Schrieber	(800) 387-1110	Bellows Falls, VT	http://www.nemrc.com/
TerraScan	Both	Bill Sheldon	(800) 279-5770	Lincoln, NE	http://www.terrascan.com/
True Automation (PACS)	Both	Manuel Araujo	(972) 881-1858	Plano TX, but a representative will be relocating to Vancouver, WA in the next year	http://www.trueautomation.com/

Between early 2007 and January of 2008 six counties had shown commitment to changing their CAMA or administrative software system in 2008 or 2009. Of those six counties two were using CompuTech (Clallam and Mason), three were using custom-built systems (Chelan, Clark and Skagit) and one was using Microsolve (Whitman).

Because CompuTech will not be servicing their software in 2009 all counties using CompuTech will eventually be working with a different vendor. Counties who have not formally selected a vendor are shown using CompuTech, but it is expected most counties will be seeking new vendors sometime this year.

Table 2 and Table 3 below summarize changes in software systems used in Washington State counties. These included changes that were known as of January 2008.

Table 2 CAMA software used in Washington State (known as of January 2008)

CAMA software	Estimated number of counties using software		
	2007	**In use or implementing in 2008 or 2009**	**Change from 2007 to 2008**
custom packages	8	5	-3
CompuTech	10	8	-2
Eagle Computer/Tyler Tech	1	1	0
Microsolve	2	1	-1
Colorado Customware (Real Ware)	1	1	0
Manatron-Proval	5	5	0
Manatron-Sigma	3	3	0
TerraScan	9	11	2
True Automation (PACS)	0	4	4
Total	39	39	-

Table 3 Administrative software used in Washington State (known as of January 2008)

Administrative software	Estimated number of counties using software		
	2007	**In use or implementing in 2008 or 2009**	**Change from 2007 to 2008**
custom packages	11	7	-4
CompuTech	10	8	-2
Eagle Computer/Tyler Tech	1	1	0
Manatron-Ascend	8	8	0
TerraScan	9	11	2
True Automation (PACS)	0	4	4
Total	39	39	-

As shown in the figures and table on the following pages only TerraScan and True Automation had an increase in the number of counties that they serve. It appears that True Automation advertises and markets their software much more heavily than other vendors. They did not start offering CAMA software to counties in Washington State until 2007, but as of January 2008 they had commitment from a total of four counties. Currently, True Automation is not installed in any Washington State county, but it is expected to be implemented in a few counties in mid to late 2008 (the rest of those counties will have software implemented in 2009).

Manuel Araujo, a representative at True Automation, has indicated that they have offered, and will continue offering multiple product demonstrations in the state. True Automation also provides software to counties in Oregon. To increase their effectiveness in the northwest, Manuel has indicated that he will be moving to Vancouver, WA to better service counties in Washington and Oregon.

Figure 1, Figure 2 and Table 4 show what CAMA and administrative software is used or will be implemented in 2008 or 2009.

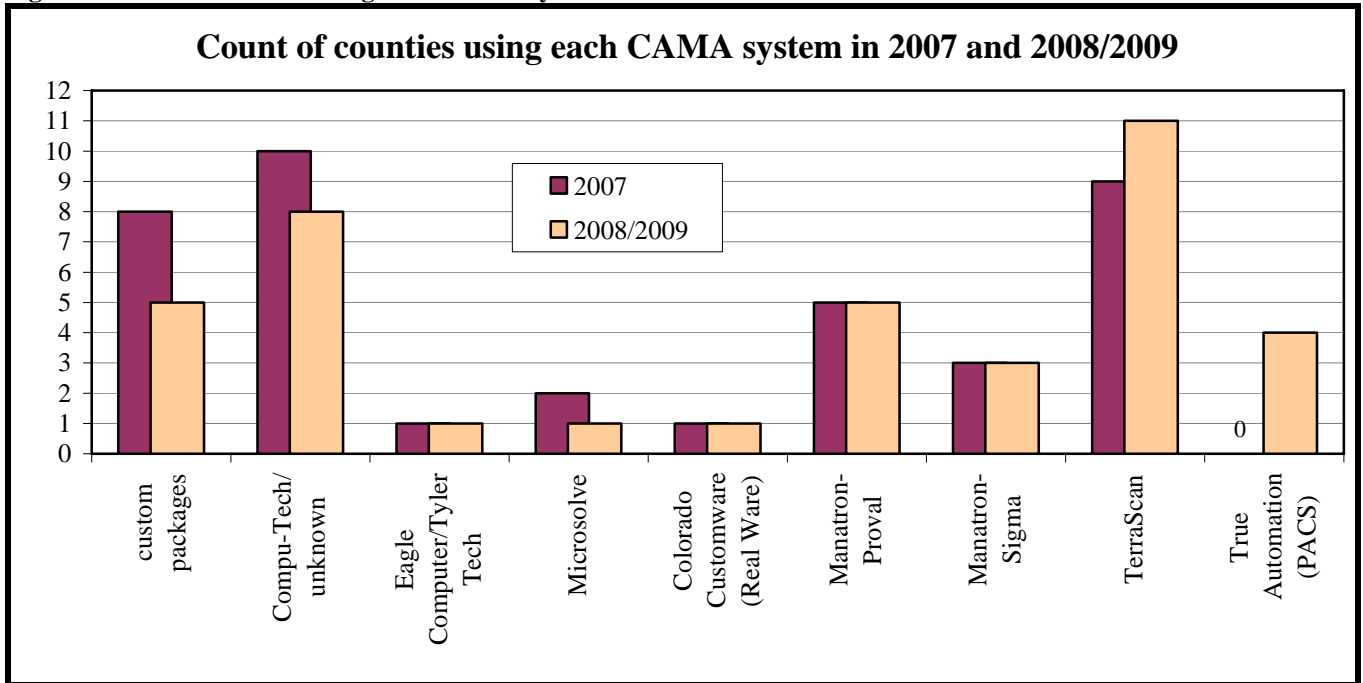**Figure 1 Count of counties using each CAMA system in 2007 and 2008/2009**

Count of counties using each CAMA system in 2007 and 2008/2009

Legend: 2007, 2008/2009

System	2007	2008/2009
custom packages	8	5
Compu-Tech/unknown	10	8
Eagle Computer/Tyler Tech	1	1
Microsolve	2	1
Colorado Customware (Real Ware)	1	1
Manatron-Proval	5	5
Manatron-Sigma	3	3
TerraScan	9	11
True Automation (PACS)	0	4

Figure 2 Count of counties using each Administrative system in 2007 and 2008/2009

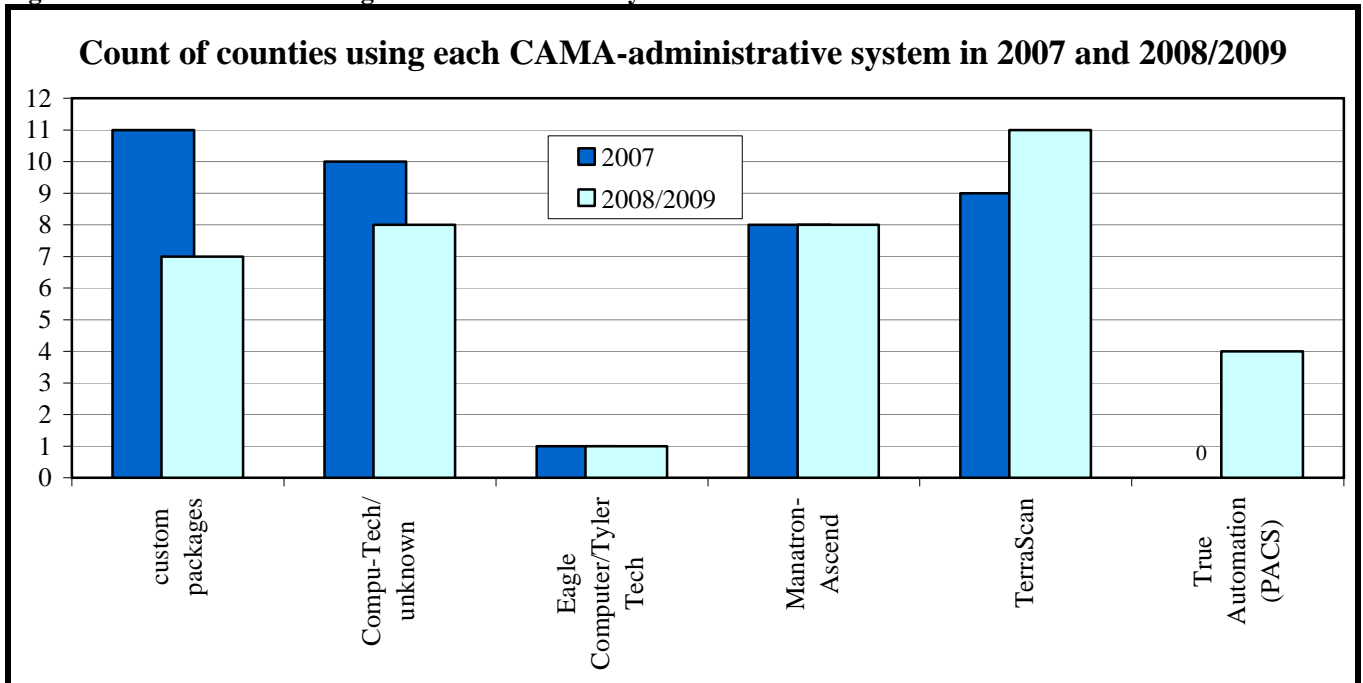**Count of counties using each CAMA-administrative system in 2007 and 2008/2009**

Legend: 2007, 2008/2009

System	2007	2008/2009
custom packages	11	7
Compu-Tech/unknown	10	8
Eagle Computer/Tyler Tech	1	1
Manatron-Ascend	8	8
TerraScan	9	11
True Automation (PACS)	0	4

Table 4 Summary of assessor software by year and by county

County	Reval cycle[1]	2007		January 2008		Total staff (2007)
		CAMA software	Administration software	CAMA software in use, or will be implementing	Administration software in use, or will be implementing	
Adams	Annual	TerraScan	TerraScan	TerraScan	TerraScan	6.00
Asotin	4 Year	custom	custom	custom	custom	5.00
Benton	Annual	Manatron-Proval	Manatron-Ascend	Manatron-Proval	Manatron-Ascend	27.00
Chelan	4 Year	custom	custom	True Automation (PACS)	True Automation (PACS)	18.00
Clallam	Annual	CompuTech	CompuTech	True Automation (PACS)	True Automation (PACS)	15.50
Clark	Annual	custom	custom	True Automation (PACS)	True Automation (PACS)	59.75
Columbia	4 Year	Microsolve	custom	Microsolve	custom	3.00
Cowlitz	Annual	Eagle Computer/Tyler Tech	Eagle Computer/Tyler Tech	Eagle Computer/Tyler Tech	Eagle Computer/Tyler Tech	19.00
Douglas	2 Year	TerraScan	TerraScan	TerraScan	TerraScan	8.00
Ferry	4 Year	TerraScan	TerraScan	TerraScan	TerraScan	3.80
Franklin	Annual	TerraScan	TerraScan	TerraScan	TerraScan	10.00
Garfield	Annual	custom	custom	custom	custom	2.00
Grant	4 Year	CompuTech	CompuTech	CompuTech / unknown	CompuTech / unknown	20.00
Grays Harbor	4 Year	custom	custom	custom	custom	16.00
Island	Annual	custom	custom	custom	custom	19.00
Jefferson	4 Year	CompuTech	CompuTech	CompuTech / unknown	CompuTech / unknown	11.35
King	Annual	custom	custom	custom	custom	229.00
Kitsap	Annual	Manatron-Proval	custom	Manatron-Proval	custom	29.50
Kittitas	4 Year	TerraScan	TerraScan	TerraScan	TerraScan	15.50
Klickitat	4 Year	Manatron-Proval	Manatron-Ascend	Manatron-Proval	Manatron-Ascend	9.00
Lewis	4 Year	Manatron-Sigma	Manatron-Ascend	Manatron-Sigma	Manatron-Ascend	20.50
Lincoln	Annual	CompuTech	CompuTech	CompuTech / unknown	CompuTech / unknown	6.00
Mason	4 Year	CompuTech	CompuTech	TerraScan	TerraScan	20.00
Okanogan	4 Year	TerraScan	TerraScan	TerraScan	TerraScan	14.00
Pacific	4 Year	TerraScan	TerraScan	TerraScan	TerraScan	8.40
Pend Oreille	4 Year	CompuTech	CompuTech	CompuTech / unknown	CompuTech / unknown	6.00
Pierce	Annual	Colorado Customware	Manatron-Ascend	Colorado Customware	Manatron-Ascend	76.00
San Juan	3 Year	CompuTech	CompuTech	CompuTech / unknown	CompuTech / unknown	8.25
Skagit	Annual	custom	custom	True Automation (PACS)	True Automation (PACS)	24.00
Skamania	Annual	TerraScan	TerraScan	TerraScan	TerraScan	6.00
Snohomish	Annual	Manatron-Proval	Manatron-Ascend	Manatron-Proval	Manatron-Ascend	72.60
Spokane	Annual	Manatron-Proval	Manatron-Ascend	Manatron-Proval	Manatron-Ascend	55.00
Stevens	4 Year	CompuTech	CompuTech	CompuTech / unknown	CompuTech / unknown	15.75
Thurston	Annual	Manatron-Sigma	Manatron-Ascend	Manatron-Sigma	Manatron-Ascend	37.00
Wahkiakum	4 Year	CompuTech	CompuTech	CompuTech / unknown	CompuTech / unknown	3.00
Walla Walla	Annual	TerraScan	TerraScan	TerraScan	TerraScan	12.00
Whatcom	4 Year	CompuTech	CompuTech	CompuTech / unknown	CompuTech / unknown	30.00
Whitman	Annual	Microsolve	custom	TerraScan	TerraScan	8.50
Yakima	Annual	Manatron-Sigma	Manatron-Ascend	Manatron-Sigma	Manatron-Ascend	28.50

[1] Franklin and Walla Walla have converted to annual revaluation effective 2008.

The following pages summarize CAMA and administration software by county parcels (real), staff and also revaluation cycles. Table 5 and Table 6 below show both CAMA and administration software by revaluation cycles for 2008.

Table 5 CAMA software in use or will be implemented in 2008 or 2009

Software	Annual revaluation cycle	Cyclical revaluation cycle	Total Counties
Colorado Customware (Real Ware)	1	0	1
CompuTech / unknown	1	7	8
custom	3	2	5
Eagle Computer/Tyler Tech	1	0	1
Manatron-Proval	4	1	5
Manatron-Sigma	2	1	3
Microsolve	0	1	1
TerraScan	5	6	11
True Automation (PACS)	3	1	4
Total	20	19	39

Table 6 Administration software in use or will be implemented in 2008 or 2009

Software	Annual revaluation cycle	Cyclical revaluation cycle	Total Counties
CompuTech / unknown	1	7	8
custom	4	3	7
Eagle Computer/Tyler Tech	1	0	1
Manatron-Ascend	6	2	8
TerraScan	5	6	11
True Automation (PACS)	3	1	4
Total	20	19	39

Table 7 and Table 8 include detailed summaries of CAMA and administrative software by median and average staff, median and average real property parcels, and also average and weighted-average of real properties per staff. Since the distributions of the measures are highly skewed, median and weighted values should be used for comparison purposes, and are discussed in more detail below.

The following bulleted section shows that of the most used CAMA software (more than three counties using the software, and excluding custom systems) the following trends were observed.

For median staff levels of counties using described CAMA software:
- The median of staff levels for counties using Manatron Proval and Manatron Sigma is 29.5 and 28.5 respectively, and are higher than the overall state median of 15.5.
- The median of staff levels for counties using True Automation is 21.0, and is closest to the overall state median.
- The median of staff levels for counties using TerraScan is 8.5.
- The median staff levels for counties using CompuTech (or are unknown for software in 2008/2009) is 9.8.

For median real property parcels of counties using described CAMA software:
- The median of real property parcels for counties using Manatron Proval and Manatron Sigma is 112,638.0 and 99,763.0 respectively, and are higher than the overall state median of 40,229.0.
- The median of real property parcels for counties using True Automation is 57,137.0.

- The median of real property parcels for counties using TerraScan is 26,861.0.
- The median of real property parcels for counties using CompuTech (or are unknown for software in 2008/2009) is 22,971.0

For the weighted average of real properties per staff (total real properties / total staff) of counties using described CAMA software:
- The weighted average of real properties per staff for counties using Manatron Proval and Manatron Sigma is 3,466.7 and 3,045.0 respectively, and are moderately close to the overall state weighted average of 3,017.0.
- The weighted average of real properties per staff for counties using TerraScan, True Automation and CompuTech (or are unknown for software in 2008/2009) is 2,724.7, 2,648.4 and 2,736.5 respectively, and are slightly lower than the overall state weighted average.

The following bulleted section shows that of the most used administrative software (more than three users, and excluding custom systems) the following trends were observed.

For median staff levels of counties using described administrative software:
- The median of staff levels for counties using Manatron Ascend 32.8, and is higher than the overall state median of 15.5.
- The median of staff levels for counties using True Automation is 21.0, and is closest to the overall state median.
- The median of staff levels for counties using TerraScan is 8.5.
- The median of staff levels for counties using CompuTech (or are unknown for software in 2008/2009) is 9.8.

For median real property parcels of counties using described administrative software:
- The median of real property parcels for counties using Manatron Ascend is 102,044.5, and is higher than the overall state median of 40,229.0.
- The median of real property parcels for counties using True Automation is 57,137.0.
- The median of real property parcels for counties using TerraScan is 26,861.0.
- The median of real property parcels for counties using CompuTech (or are unknown for software in 2008/2009) is 22,971.0

For the weighted average of real properties per staff (total real properties / total staff) of counties using described administrative software:
- The weighted average of real properties per staff for counties using Manatron Ascend is 3,470.9, and is slightly higher than the overall state weighted average of 3,017.0.
- The weighted average of real properties per staff for counties using TerraScan, True Automation and CompuTech (or are unknown for software in 2008/2009) is 2,724.7, 2,648.4 and 2,736.5 respectively, and are slightly lower than the overall state weighted average.

Table 7 CAMA software in use (or indicated software change as reported in January 2008)

County	Colorado Customware (Real Ware)	CompuTech/ unknown	custom	Eagle Computer/ Tyler Tech	Manatron-Proval	Manatron-Sigma	Microsolve	TerraScan	True Automation (PACS)	All Counties
Count of counties using software	1	8	5	1	5	3	1	11	4	39
Average staff (2007)	76.0	12.5	54.2	19.0	38.6	28.7	3.0	10.2	29.3	25.1
Median staff (2007)	76.0	9.8	16.0	19.0	29.5	28.5	3.0	8.5	21.0	15.5
Average real property parcels (2006)	311,492.0	34,326.3	151,635.4	53,227.0	133,882.6	87,288.7	5,275.0	27,792.0	77,630.3	75,648.5
Median real property parcels (2006)	311,492.0	22,971.0	49,160.0	53,227.0	112,638.0	99,763.0	5,275.0	26,861.0	57,137.0	40,229.0
Average real properties per staff	4,098.6	2,468.1	2,638.5	2,801.4	3,164.6	3,046.2	1,758.3	2,735.3	2,684.0	2,753.4
Weighted average of real properties per staff (total properties / total staff)	4,098.6	2,736.5	2,797.7	2,801.4	3,466.7	3,045.0	1,758.3	2,724.7	2,648.4	3,017.0
Counties using software	Pierce	Grant Jefferson Lincoln Pend Oreille San Juan Stevens Wahkiakum Whatcom	Asotin Garfield Grays Harbor Island King	Cowlitz	Benton Kitsap Klickitat Snohomish Spokane	Lewis Thurston Yakima	Columbia	Adams Douglas Ferry Franklin Kittitas Mason Okanogan Pacific Skamania Walla Walla Whitman	Chelan Clallam Clark Skagit	

Table 8 Administrative software in use (or indicated software change as reported in January 2008)

Software	CompuTech/ unknown	custom	Eagle Computer/Tyler Tech	Manatron-Ascend	TerraScan	True Automation (PACS)	All Counties
Count of counties using software	8	7	1	8	11	4	39
Average staff (2007)	12.5	43.4	19.0	40.7	10.2	29.3	25.1
Median staff (2007)	9.8	16.0	19.0	32.8	8.5	21.0	15.5
Average real property parcels (2006)	34,326.3	125,155.7	53,227.0	141,266.6	27,792.0	77,630.3	75,648.5
Median real property parcels (2006)	22,971.0	49,160.0	53,227.0	102,044.5	26,861.0	57,137.0	40,229.0
Average real properties per staff	2,468.1	2,681.3	2,801.4	3,155.2	2,735.3	2,684.0	2,753.4
Weighted average of real properties per staff (total properties / total staff)	2,736.5	2,886.6	2,801.4	3,470.9	2,724.7	2,648.4	3,017.0
Counties using software	Grant Jefferson Lincoln Pend Oreille San Juan Stevens Wahkiakum Whatcom	Asotin Columbia Garfield Grays Harbor Island King Kitsap	Cowlitz	Benton Klickitat Lewis Pierce Snohomish Spokane Thurston Yakima	Adams Douglas Ferry Franklin Kittitas Mason Okanogan Pacific Skamania Walla Walla Whitman	Chelan Clallam Clark Skagit	

Summary information on Manatron, TerraScan and True Automation software

The rest of this report includes detailed information on three software vendors; Manatron (Proval, Sigma, Ascend), TerraScan and True Automation (PACS). They appear to be the most popular CAMA and administrative software vendors in Washington State. They currently provide software (or have contracts to provide software) to 24 of the 39 counties (61.5%). The number of counties working with these vendors increased from 18 to 24 between 2007 and 2008 (a 33% increase).

Because CompuTech will not service their CAMA systems starting in 2010, CompuTech's components are not discussed in this summary. As of January 2008 two of the ten counties using CompuTech software had shown commitment to using different CAMA software in 2008.

There are four other vendors that provide software to three counties (categorized as 'other vendors'). Because these appear to be less widely used software packages they are not discussed in detail. A summary of reasons why software packages are not discussed in detail is shown in Table 9 below.

Table 9 Software vendors discussed in this summary*

Software Vendors	Estimated number of counties using or implementing software in 2008 or 2009		Discussed in this summary?	Reasons why discussed or not discussed
	CAMA software	Administrative software		
Manatron (GRM, Ascend, Proval), TerraScan, True Automation	23	23	Yes	Appears to be the more popular software vendors. Over the last year there was a 33% increase in the number of counties working with these three software vendors (from 18 in 2007 to 24 in January 2008)
CompuTech/ unknown	8	8	No	CompuTech will not be servicing CAMA systems starting in 2009. All counties using CompuTech software will be purchasing new CAMA and administrative software. As a result the functions of CompuTech will not be of importance to DOR or to counties seeking new software.
Other vendors Microsolve, Tyler Technology, Colorado Customware	3	1	No	These vendors are used by limited numbers of counties. In January 2008 there were only three counties using vendors in this category (from four counties in 2007 to three in January 2008).
custom	5	7	No	Between 2007 and January 2008 there was a 36% drop in the number of counties using custom built administrative and/or CAMA software (from eleven counties to seven). In order to summarize information on custom software packages DOR would need to contact and evaluate each county's custom software packages.
Total	39	39		

* Please note that some counties may work with one vendor for their CAMA system and a different vendor for their administrative software

Table 10 Software information on Manatron GRM

Software vendor	Manatron
Assessor related software available through vendor	Manatron GRM (which includes Manatron CAMA, Manatron Tax, Manatron Recorder and Manatron eGovernment), Manatron Ascend, Manatron Proval
Date information collected	12/04/2007
Contact name	John Walters
Contact phone	(800) 335-2525 ext 112
Number of employees	400
Hours of operation	7am–6pm PST
Number of years in software business	35 years
Notes	GRM software currently not being used in Washington State, but counties can purchase the software. Manatron has indicated that it would be more cost effective if a large county were to be the first in Washington to purchase the software.

Software function	CAMA	GIS	Administration
General Software Information			
Software name	Manatron GRM	Manatron GRM	Manatron GRM
Description of software (as described by vendor)	Manatron Government Revenue Management — GRM, has been designed to support the entire property tax life cycle including Recording, GIS, Valuation, Assessment Administration, Tax Billing and Collection, Delinquent and Tax Sale. It automates the operational, information and planning needs for Assessors, Auditors, Treasurers, Tax Collectors, Recorders and other state and local governmental officials.	Manatron Government Revenue Management — GRM, has been designed to support the entire property tax life cycle including Recording, GIS, Valuation, Assessment Administration, Tax Billing and Collection, Delinquent and Tax Sale. It automates the operational, information and planning needs for Assessors, Auditors, Treasurers, Tax Collectors, Recorders and other state and local governmental officials.	Manatron Government Revenue Management — GRM, has been designed to support the entire property tax life cycle including Recording, GIS, Valuation, Assessment Administration, Tax Billing and Collection, Delinquent and Tax Sale. It automates the operational, information and planning needs for Assessors, Auditors, Treasurers, Tax Collectors, Recorders and other state and local governmental officials.
Is the software currently being implemented in WA state?	No	No	No
Number of jurisdictions in WA state with access to the software	None	None	None
Number of years software has been offered in WA state			
Is this software incorporated into the CAMA software (is it required that it be purchased as part of the CAMA system)?		No	No

Software function	CAMA	GIS	Administration
If no, is it possible to incorporate/link this component into your CAMA software (i.e. has it been done)?		Yes	Yes
Does the software incorporate document storage/imaging?	Yes	Yes	Yes
Does the software integrate with any generic software (ex. SPSS, NCSS, SAS, ESRI, Apex, Microsoft programs)?	Yes	Yes	Yes
What software?	All mentioned above	All mentioned above	All mentioned above
CAMA Software Information			
Does the CAMA software comply with WA State laws?	Yes		
Does the CAMA software comply with the International Association of Assessing Officers?	Yes		
Does the CAMA software integrate cost manuals (Marshal & Swift, etc)?	Yes		
What manual?	All mentioned above		
Does the software include income approach models to valuing property?	Yes		
Does the software include sales approach models to valuing property?	Yes		
Does the software include cost approach models to valuing property?	Yes		
Does the software include models to automatically value land?	Yes		
Does the software value personal property?	Yes		
Training and Support			
Do you provide users with hands-on training?	Yes	Yes	Yes

Software function	CAMA	GIS	Administration
Do you provide users with instruction/user manuals and/or training manuals?	Yes	Yes	Yes
What is your guaranteed response time for support calls (business hours)?	2–4 hours	2–4 hours	2–4 hours
References and Other Information			
Do you have printed brochures available for Washington State users?	Yes	Yes	Yes
Do you have information available online for Washington State users?	Yes	Yes	Yes
Website address?	www.manatron.com	www.manatron.com	www.manatron.com
References for software (list jurisdiction, phone and/or email)	Available, please call.	Available, please call.	Available, please call.

Table 11 Software information on Manatron Ascend and Proval

Software vendor	Manatron
Assessor related software available through vendor	Manatron GRM (which includes Manatron CAMA, Manatron Tax, Manatron Recorder and Manatron eGovernment), Manatron Ascend, Manatron Proval
Date information collected	12/04/2007
Contact name	john.walters@manatron.com
Contact phone	(800) 335-2525 ext 112
Number of employees	400
Hours of operation	7am–6pm PST
Number of years in software business	35 Years
Notes	Manatron has acquired Proval, Sigma and Ascend over the years. Manatron is maintaining all of these systems. Currently, Manatron is not offering Sigma to counties who do not already use the software.

Software function	CAMA	GIS	Administration
General Software Information			
Software name	Proval (Manatron CAMA)	Manatron GRM	Ascend
Description of software (as described by vendor)	Manatron CAMA is a comprehensive Government Revenue Management (GRM) property appraisal software product. It features a highly productive, integrated sketch package and an extremely accurate valuation engine for calculating property values. It is the most widely deployed and, nationally recognized CAMA software product available today.	Manatron Government Revenue Management — GRM, has been designed to support the entire property tax life cycle including Recording, GIS, Valuation, Assessment Administration, Tax Billing and Collection, Delinquent and Tax Sale. It automates the operational, information and planning needs for Assessors, Auditors, Treasurers, Tax Collectors, Recorders and other state and local governmental officials.	Manatron Ascend is a powerful and flexible GRM property tax billing and collection solution for tax collection officials. Manatron Ascend provides the functionality to maintain, bill, collect, distribute and track property accounts and associated taxes. Using the most up-to-date technology, built on the Microsoft platform, Ascend allows tax collection officials the ability to manage real property, personal property, manufactured structures, motor vehicles and special assessments.
Is the software currently being implemented in WA state?	Yes	No	Yes
Number of jurisdictions in WA state with access to the software	5 (Benton, Kitsap, Klickitat, Snohomish, Spokane)	None	8 (Benton, Klickitat, Lewis, Pierce, Snohomish, Spokane, Thurston, Yakima)
Number of years software has been offered in WA state	Since 1996		Since 1996
Is this software incorporated into the CAMA software (is it required that it be purchased as part of the CAMA system)?		No	No

Software function	CAMA	GIS	Administration
If no, is it possible to incorporate/link this component into your CAMA software (i.e. has it been done)?		Yes	Yes
Does the software incorporate document storage/imaging?	Yes	Yes	Yes
Does the software integrate with any generic software (ex. SPSS, NCSS, SAS, ESRI, Apex, Microsoft programs)?	Yes	Yes	Yes
What software?	All mentioned above	All mentioned above	All mentioned above
CAMA Software Information			
Does the CAMA software comply with WA State laws?	Yes		
Does the CAMA software comply with the International Association of Assessing Officers?	Yes		
Does the CAMA software integrate cost manuals (Marshal & Swift, etc)?	Yes		
What manual?	All mentioned above		
Does the software include income approach models to valuing property?	Yes		
Does the software include sales approach models to valuing property?	Yes		
Does the software include cost approach models to valuing property?	Yes		
Does the software include models to automatically value land?	Yes		
Does the software value personal property?	Yes		
Training and Support			
Do you provide users with hands-on training?	Yes	Yes	Yes
Do you provide users with instruction/user manuals and/or training manuals?	Yes	Yes	Yes

Software function	CAMA	GIS	Administration
What is your guaranteed response time for support calls (business hours)?	2–4 hours	2–4 hours	2–4 hours
References and Other Information			
Do you have printed brochures available for Washington State users?	Yes	Yes	Yes
Do you have information available online for Washington State users?	Yes	Yes	Yes
Website address?	www.manatron.com	www.manatron.com	www.manatron.com
References for software (list jurisdiction, phone and/or email)	Available, please call.	Available, please call.	Available, please call.

Table 12 Software information on TerraScan

Software vendor	TerraScan
Assessor related software available through vendor	TerraScan CAMA, Mapsifter/LM Tools, Taxsifter, Gdoc/Building and Planning, REET, Recorder, Finance, Permitting/Inspection
Date information collected	01/25/2008
Contact name	Bill Sheldon
Contact phone	(402) 420-6074
Number of employees	22 / 85 (TerraScan and our sister company, Automated Systems (banking software), we employee 106. Some resources and personnel are shared between companies.)
Hours of operation	8am-5pm CST (Support hours are extended to match our client's needs during certain state calendar events: COV, Roll over, etc)
Number of years in software business	8 / 25 (TerraScan was incorporated in 2000 after being a division of Automated System since 1995. Automated Systems began in 1981)
Notes	

Software function	CAMA	GIS	Administration	Permitting/ Inspection	REET	File Management	Finance
General Software Information							
Software name	TerraScan	MapSifter/LM Tools	TerraScan				
Description of software (as described by vendor)	The TerraScan CAMA System is a full-featured mass appraisal system that is completely integrated with the assessment administration system. This system provides users with the ability to value all classes of real property (residential,	MapSifter is an information dissemination tool designed to provide local government employees and the public easy access to government information. This tool draws from many different departments using both spatial and tabular data. MapSifter brings	The TerraScan CAMA System is a full-featured mass appraisal system that is completely integrated with the assessment administration system. This system provides users with the ability to value all classes of real property (residential, commercial, agricultural, and	The Permitting / Inspection module of GDoc is the main piece of software used in the Building / Planning Department offices. This application gives public users the ability to apply for Permits over the internet.	REET affidavit submittal, receipting, validation, and transmittal to Department of Revenue.	TerraScan Recording is an information management tool that assists in the filing, management and retrieval of documents including deeds, mortgages, and liens. Information is entered once and the required reports are generated.	

Software function	CAMA	GIS	Administration	Permitting/ Inspection	REET	File Management	Finance
	commercial, agricultural, and mobile home).	all of this information together and presents it an easy to use web based format.	mobile home).				
Is the software currently being implemented in WA state?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of jurisdictions in WA state with access to the software	9 (Adams, Douglas, Ferry, Franklin, Kittitas, Okanogan, Pacific, Skamania, Walla Walla), plus 2 more contracted (Mason, Whitman)	9 (Adams, Douglas, Ferry, Franklin, Kittitas, Okanogan, Pacific, Skamania, Walla Walla), plus 2 more contracted (Mason, Whitman)	9 (Adams, Douglas, Ferry, Franklin, Kittitas, Okanogan, Pacific, Skamania, Walla Walla), plus 2 more contracted (Mason, Whitman)	9 (Adams, Douglas, Ferry, Franklin, Kittitas, Okanogan, Pacific, Skamania, Walla Walla), plus 2 more contracted (Mason, Whitman)	9 (Adams, Douglas, Ferry, Franklin, Kittitas, Okanogan, Pacific, Skamania, Walla Walla), plus 2 more contracted (Mason, Whitman)	9 (Adams, Douglas, Ferry, Franklin, Kittitas, Okanogan, Pacific, Skamania, Walla Walla), plus 2 more contracted (Mason, Whitman)	9 (Adams, Douglas, Ferry, Franklin, Kittitas, Okanogan, Pacific, Skamania, Walla Walla), plus 2 more contracted (Mason, Whitman)
Number of years software has been offered in WA state	8	6	8	6	1	1	1
Is this software incorporated into the CAMA software (is it required that it be purchased as part of the CAMA system)?		No	No	No	No	No	No
If no, is it possible to incorporate/link this component into your CAMA software (i.e. has it been done)?		Yes	Yes	Yes	Yes	Yes	No

Software function	CAMA	GIS	Administration	Permitting/ Inspection	REET	File Management	Finance
Does the software incorporate document storage/imaging?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Does the software integrate with any generic software (ex. SPSS, NCSS, SAS, ESRI, Apex, Microsoft programs)?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
What software?	Excel, Word, SPSS, NCSS, Microsoft Analysis Services	ESRI ArcGIS, ArcServer	Excel, Word, SPSS, NCSS, Microsoft Analysis Services	Excel, Word, ESRI	Excel	Excel, 3rd party Doc Mgmnt	Excel
CAMA Software Information							
Does the CAMA software comply with WA State laws?	Yes						
Does the CAMA software comply with the International Association of Assessing Officers?	Yes						
Does the CAMA software integrate cost manuals (Marshal & Swift, etc)?	Yes						
What manual?	Marshal & Swift Residential and Commercial						

Software function	CAMA	GIS	Administration	Permitting/ Inspection	REET	File Management	Finance
Does the software include income approach models to valuing property?	Yes						
Does the software include sales approach models to valuing property?	Yes						
Does the software include cost approach models to valuing property?	Yes						
Does the software include models to automatically value land?	Yes						
Does the software value personal property?	Yes						
Training and Support							
Do you provide users with hands-on training?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Do you provide users with instruction/user manuals and/or training manuals?	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Software function	CAMA	GIS	Administration	Permitting/ Inspection	REET	File Management	Finance
What is your guaranteed response time for support calls (business hours)?	All calls are answer by a human immediately or are returned within 10 minutes	All calls are answer by a human immediately or are returned within 10 minutes	All calls are answer by a human immediately or are returned within 10 minutes	All calls are answer by a human immediately or are returned within 10 minutes	All calls are answer by a human immediately or are returned within 10 minutes	All calls are answer by a human immediately or are returned within 10 minutes	All calls are answer by a human immediately or are returned within 10 minutes
References and Other Information							
Do you have printed brochures available for Washington State users?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Do you have information available online for Washington State users?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Website address?	www.terrascan.com	www.terrascan.com	www.terrascan.com	www.terrascan.com	www.terrascan.com	www.terrascan.com	www.terrascan.com
References for software (list jurisdiction, phone and/or email)	Steve Marks (Franklin County), Pat Dull (Douglas County), Dave Anderson (Adams County)						

Table 13 Software information on True Automation

Software vendor	True Automation
Assessor related software available through vendor	PACS Appraisal / Assessment Administration Application, PACS Collections / Treasurer Administration Application, PACS GIS & CAMA Administration & Integration Software, PACS.Online™ (Appraisal & Collections Application Hosting), Truth-in-Taxation (Online Effective Tax Rate Calculations), PropertyACCESS™ (Client Databases & Arc IMS Integration)
Date information collected	12/21/2007
Contact name	Manuel Araujo, Vice President of Marketing
Contact phone	(972) 881-1858
Number of employees	85 employees
Hours of operation	8am–5pm CDT
Number of years in software business	10 years
Notes	

Software function	CAMA	GIS	Administration
General Software Information			
Software name	PACS Appraisal	PACS GIS Viewer & GIS Appraiser	PACS Collections
Description of software (as described by vendor)	PACS Appraisal is uniquely designed to perform every appraisal function of your district, from data entry and verification to certified roll processing and state submissions.	PACS GIS Viewer allows the Assessor's office to easily integrate GIS parcel data and CAMA software using ESRI's Map Objects. This integration allows users to geographically locate properties immediately. All property characteristics and comparable sales can be quickly displayed and labeled on a map for use by the appraisers. With this data integrated in one place, through one interface, users can achieve ultimate efficiencies. This integration can be delivered to each user in the Assessor's office at a very affordable cost. PACS GIS Appraiser provides additional functionality to True Automation's GIS Viewer. With PACS GIS Appraiser, the CAMA property characteristics can be updated directly from the GIS map. Users can perform every task needed within the property appraisal process by selecting properties within the map interface and directly updating the elements of individual or multiple properties.	The tax collections process is an essential activity for any tax office and appraisal district. You must be able to automate and manage this process with an easy to use software application. You require comprehensive automation and management for collecting and auditing of property taxes and the fees involved with tax collections. PACS Collection is the solution for efficient and accurate collecting for any county tax office or collecting appraisal district. PACS Collections, written with the user in mind, makes a collector's daily tasks efficient. Using wizards and intuitive software, PACS will dramatically enhance your office's workflow and improve overall efficiency of the collections process.

Software function	CAMA	GIS	Administration
Is the software currently being implemented in WA state?	Yes	Yes	Yes
Number of jurisdictions in WA state with access to the software	None currently in production, 3 are slated for implementation during 2008, 2 more for 2009 (Chelan, Clallam, Clark, Skagit)	None	None currently in production, 3 are slated for implementation during 2008, 2 more for 2009 (Chelan, Clallam, Clark, San Juan, Skagit)
Number of years software has been offered in WA state	One	One	One
Is this software incorporated into the CAMA software (is it required that it be purchased as part of the CAMA system)?		Yes	No
If no, is it possible to incorporate/link this component into your CAMA software (i.e. has it been done)?		Yes	Yes
Does the software incorporate document storage/imaging?	Yes	Yes	Yes
Does the software integrate with any generic software (ex. SPSS, NCSS, SAS, ESRI, Apex, Microsoft programs)?	Yes	Yes	Yes
What software?	Crystal Reports, Microsoft Word, Microsoft Excel, Pictometry, SPSS analytical tools, ESRI (ESRI Map Objects, ESRI Arc Objects, and ESRI ARCIMS)	ESRI (ESRI MapObjects & ESRI ArcObjects)	Crystal Reports, 3rd party accounting systems, Microsoft Programs
CAMA Software Information			
Does the CAMA software comply with WA State laws?	Yes. With the assistance of Clark County, Washington, PACS will be in compliance with all Washington State Laws.		
Does the CAMA software comply with the International Association of Assessing Officers?	Yes		
Does the CAMA software integrate cost manuals (Marshal & Swift, etc)?	Yes		
What manual?	Marshall & Swift Commercial & Residential estimator		

Software function	CAMA	GIS	Administration
Does the software include income approach models to valuing property?	Yes		
Does the software include sales approach models to valuing property?	Yes		
Does the software include cost approach models to valuing property?	Yes		
Does the software include models to automatically value land?	Yes		
Does the software value personal property?	Yes		
Training and Support			
Do you provide users with hands-on training?	Yes	Yes	Yes
Do you provide users with instruction/user manuals and/or training manuals?	Yes, Printed and Electronic	Yes, Printed and Electronic	Yes, Printed and Electronic
What is your guaranteed response time for support calls (business hours)?	One business day	One business day	One business day
References and Other Information			
Do you have printed brochures available for Washington State users?	Yes	Yes	Yes
Do you have information available online for Washington State users?	Yes	Yes	Yes
Website address?	www.trueautomation.com	www.trueautomation.com	www.trueautomation.com
References for software (list jurisdiction, phone and/or email)	True Automation currently has 141 CAMA Customers. 92 assessors offices, 28 county tax offices, 1 water district tax office, 3 city tax offices, 11 school tax offices. Largest: Bexar CAD, Travis CAD, Denton CAD, Collin CAD, McLennan CAD, Brazoria CAD and Bell CAD--serve between 120,000 to 650,000 parcels, 30-170 users. (Detailed references available)	True Automation currently has 141 CAMA Customers. 92 assessors offices, 28 county tax offices, 1 water district tax office, 3 city tax offices, 11 school tax offices. Largest: Bexar CAD, Travis CAD, Denton CAD, Collin CAD, McLennan CAD, Brazoria CAD and Bell CAD--serve between 120,000 to 650,000 parcels, 30-170 users. (Detailed references available)	True Automation currently has 141 CAMA Customers. 92 assessors offices, 28 county tax offices, 1 water district tax office, 3 city tax offices, 11 school tax offices. Largest: Bexar CAD, Travis CAD, Denton CAD, Collin CAD, McLennan CAD, Brazoria CAD and Bell CAD--serve between 120,000 to 650,000 parcels, 30-170 users. (Detailed references available)

Hardware and software requirements for Manatron, TerraScan and True Automation

Information reported in this section was collected directly from vendors. Any opinions or preferences stated are those of the respective software vendors.

Manatron GRM, Ascend, Proval (information collected from vendor 12/4/07)

Call Manatron directly for detailed software/hardware requirements. All software runs in MS Windows.

TerraScan (information collected from vendor 1/28/08)

❖ Server Software
  ➢ The software chosen will have an impact on the available hardware options. Both the Operating System, as well as the edition of SQL Server selected, can limit the impact of additional hardware as it relates to performance.
  ➢ Operating System: Requires Windows Server 2003 (Service Pack 2), with IIS 6.0 or above.
    ▪ 32-Bit
      • Windows Server 2003 Standard (SP2) can address up to 4 GB of RAM.
      • Windows Server 2003 Enterprise (SP2) can address up to 32 GB of RAM.
      • Windows Server 2003 Datacenter (SP2) can address up to 128 GB of RAM.
    ▪ 64-Bit
      • Windows Server 2003 Standard (SP2) can address up to 32 GB of RAM.
      • Windows Server 2003 Enterprise (SP2) can address up to 64 GB of RAM.
      • Windows Server 2003 Datacenter (SP2) can address up to 2 TB or RAM.
    ▪ For more information about Windows Server operating system requirements, visit this link: http://technet.microsoft.com/en-us/windowsserver/bb430827.aspx
  ➢ SQL Server 2005
    ▪ TerraScan will run on several versions of SQL Server 2005, including:
      • SQL Server 2005 Express
        ♦ 1 CPU
        ♦ 1 GB RAM
        ♦ 4GB Database size limit
        ♦ No 64-bit support
        ♦ SQL Server Express is free software, but severely limits the functionality of the database size and performance. It is unlikely that this configuration would be sufficient for the TerraScan application.
      • SQL Server 2005 Standard
        ♦ Up to 4 CPUs
        ♦ Up to Operating System limit for RAM
        ♦ No Database size limit
        ♦ 64-bit support

- ♦ Normal SQL Server Standard pricing is around $6,000 per processor. Because of TerraScan's involvement in the Microsoft ISV program, they can offer it to their clients at around $2,000 per processor.
  - SQL Server 2005 Enterprise
    - ♦ No Limit to CPUs
    - ♦ Up to Operating System limit for RAM
    - ♦ No Database size limit
    - ♦ 64-bit support
    - ♦ Normal SQL Server Enterprise pricing is around $24,000 per processor. Because of TerraScan's involvement in the Microsoft ISV program, they can offer it to their clients at around $7,200 per processor.
  - TerraScan requires SQL Server 2005, and will not function against any prior versions of SQL Server, or against any other Database platform.
  - For more information about SQL Server system requirements, visit this link: http://www.microsoft.com/sql/prodinfo/features/compare-features.mspx
  - Backup software: Third-party backup software such as Vertitas BackupExec or CA ArcServer can provide a higher level of backup management than the backup provided by Windows. Not required for TerraScan operation.
  - Anti Virus Protection: Not required for TerraScan operation, but is recommended.
- ❖ Server Hardware
  - ➢ The requirements for the TerraScan application server are roughly equivalent to the requirements for SQL Server 2005.
  - ➢ The software elements selected in the previous sections will impact decisions made in hardware selection. The following notes are intended as guides in selecting the appropriate minimum hardware for your county:
    - Processors: The speed of your processor will directly affect the speed of queries and processes in your TerraScan application. Multiple processors can aid performance in multi-user environments, but are not required. 64-bit processors are recommended because they are relatively similar in price yet provide a great deal more support for performance-improving hardware. Newer dual-core processors will aid in performance, and don't require additional SQL Server licensing. When selecting a processor, bear in mind that the second-fastest processor is often the best value, as the fastest processor always carries a premium price.
    - RAM: If you select SQL Server Express, you will only be able take advantage of 1 GB of RAM. If you select SQL Server Standard or Enterprise, you will be able take advantage of all the RAM the Server can hold. Typically a server with at least 4 GB's of RAM is appropriate for your county if using SQL Server Standard.
    - Hard Drive: For the initial TerraScan install, the server should have 2 GB of free space available. In production, the database and associated files, as well as any attached files or sketches, can consume greater than 50 GB depending on County size. The addition of GIS data or a significant number of attachments can add significantly, particularly due to aerial photos or property photos.
    - Backup: TerraScan does not require a backup drive or system to operate, however we highly recommend a comprehensive backup system be implemented according to your counties backup standards. Most common is a tape backup system sufficient to back up your hard drives. The two most popular tape technologies are DDS4 and DLT. Consult your IT staff to determine backup protocols.
    - Uninterruptible Power Supply (UPS): Used to provide the server power for a short period during power outages. Not required for TerraScan operation, but is recommended.
- ❖ User Desktop

- ➢ Operating System: TerraScan requires the existence of the .NET 3.0 framework on the user desktop: http://msdn.microsoft.com/netframework/. This can be accomplished several ways:
  - ▪ Windows XP – This is the most popular option, and tends to be installed on hardware that matches the needs of modern software
  - ▪ Terminal Services (RDP) – This projects a Windows desktop from the Server running Windows Server 2003. This requires additional TS CALs beyond the standard Windows CAL. Terminal Services simplifies desktop management and can also be deployed on inexpensive terminals. See http://www.microsoft.com/windowsserver2003/technologies/terminalservices/default.mspx or http://www.wyse.com/products/winterm/
    - • NOTE: The use of Terminal Services will place a much greater load on the server, and additional RAM may be required.
  - ▪ Windows Vista Business Edition – This desktop operating system is compatible with TerraScan. For more information see http://www.microsoft.com/windowsvista/
- ➢ Office Software: TerraScan applications will take advantage of Microsoft Excel if installed, and is one of the export options for all reports. In addition, TerraScan will take advantage of Microsoft Word if installed for automated letter creation.
- ➢ Processors: The speed of your processor will directly affect the speed of your application. TerraScan's minimum requirements are the same as the highest recommended requirement of the Microsoft Windows version you will be running. When selecting a processor, bear in mind that the second-fastest processor is often the best value, as the fastest processor always carries a premium price.
- ➢ RAM: Insufficient RAM will directly reduce the performance of your application. We recommend a minimum of 1 GB if you will be running Microsoft office with TerraScan. If you will also be running desktop GIS applications such as ArcView or ArcReader, consider getting more RAM.
- ➢ Hard Drive: For TerraScan, the hard drive requirements are the same as your operating system. It is recommended that a client machine have up to 1 GB of hard drive space available to run the TerraScan application.
- ➢ Anti Virus Protection: Not required for TerraScan operation, but is recommended.

True Automation (information collected from vendor 12/21/07)

Below are recommended software and hardware components for CAMA or CAMA-related software to function adequately.

- ❖ Server Software
  - ➢ Recommended hardware configuration for the database server:
    - ▪ Hard drive free space: 16 TB Storage Initially – Expandable to 32 TB
    - ▪ RAM: 64 GB Memory, 32x2 GB, 667 MHz
    - ▪ Processor and speed: Four Quad-Core 2.13 Xeon (PowerEdge R900)
    - ▪ Operating system(s) with version number: Windows 2003 Server Enterprise Edition x64
  - ➢ Recommended software configuration for the database server:
    - ▪ Database (First choice): Microsoft SQL Server 2005 Server x64
      - • Version number: SQL 2005 SP2 x64
    - ▪ Database (Second choice): Microsoft SQL Server
      - • Version number: SQL 2005

- ❖ File Server
  - ➢ Recommended hardware configuration for the file server:
    - ▪ Xeon Class Processor: 1 GHz or greater
    - ▪ Memory: 16 MB per 1000 properties plus 8 MB per client
    - ▪ Disk space: 100 MB per 1000 properties (1 GB minimum)
    - ▪ Tape backup system
    - ▪ 100/1000 MB Ethernet card / CD-Rom
    - ▪ 15" Monitor
    - ▪ Windows 2003 Server Edition with latest service updates
  - ➢ Recommended network operating system
    - ▪ Network protocol: TCPIP
    - ▪ Capacity: Switched Network
    - ▪ Speed: 100 MB (1000 MB) Optimal
  - ➢ The PACS product also requires a Local Area Network (LAN) infrastructure to be in place for proper operation. All cable-drops must be Category 5 or better certified throughout the building.
- ❖ User Desktop
  - ➢ Recommended hardware for client machines
    - ▪ Intel® Core™ 2 Duo Processor E4400 (2.0GHz, 2M, 800MHz FSB)
    - ▪ 100mb Available Disk
    - ▪ Windows XP Professional with latest service updates or Windows Vista Business edition
    - ▪ 2GB RAM Memory
    - ▪ 100/1000Mb Ethernet Card
    - ▪ 17" Monitor – 1024 x 768 resolution
  - ➢ Recommended software for client machines
    - ▪ Operating System
      - • Windows XP or Windows Vista Business edition is supported
    - ▪ Network protocols supported
      - • Network protocol: TCPIP
      - • Capacity: Switched Network
      - • Speed: 100 MB (1000 MB) Optimal
    - ▪ Software requirements (run-time libraries, DLL's required, etc.): None
    - ▪ Other software requirements: None
    - ▪ Middleware used between client and server: None