

Ohio EPA Asset Management

May 22, 2012



Project Summary

The project objective is to use Gartner and other resources to research and analyze several software tools and make recommendations to Ohio EPA for those ideal in meeting a majority of the Ohio EPA's Asset Management requirements. To provide a document of minimum requirements needed for inclusion in an agency Policy and Procedure in order to meet state requirements for asset management.

Project Goal

This project is being done to fulfill requirements for completion of the Project Management course hosted by Department of Administrative Services. This project was specifically selected based on its applicability to all state agencies to provide helpful information that can be benchmarked from by other state agencies in putting in place their own AM systems and processes.

Not only is there a State of Ohio Policy and Procedure on Asset Management last updated December 2011 that all state agencies need to get into compliance with, but this AM policy is the result of law and administrative code requirements: ORC 125.16 and DAS Directive no. 06-27.

Where some tracking of state property including IT assets is taking place, the system and processes need a major realignment in order to meet state requirements. This Asset Management project will provide the information helpful to select the most appropriate software solution and provide information required for the agency policy and procedure and for business process changes that will better support asset management throughout the supply and administration channels.

Project Outcome

Provide all planning documents to cover the following deliverables:

1. Analysis of one to two asset management related software tools that could be used to track bar code related information that could be automatically uploaded into OAKS or other mid-tier software with analysis and findings documented by May 8, 2012 and delivered by May 22, 2012.
2. Review of all data elements identified via the preliminary project to gather requirements to ensure all critical Fiscal, Property Management, and IT fields have been included for the future Asset Management system to be built. Critical fields will be determined via consult with SMEs for each area above. Labeling of all Fiscal fields, facilities/property management fields, and IT-related fields for easy identification of data type owners within the agency by May 8, 2012. Document provided to Ohio EPA by May 22, 2012.
3. Identification and listing of all minimum requirements for Ohio EPA and all state agencies to include in their agency-specific Policy and Procedure for Asset Management based on the State of Ohio Asset Management Policy and Procedure updated in Dec 2011.

Project Benefits

This project will benefit the Ohio EPA by providing the bar code software analysis, policy and procedure minimum requirements, and data elements for OAKS interface. This information can be utilized by all state agencies to benchmark from and develop their own asset management systems. Additional benefits include:

- Increased efficiency,
- Controlled cost,
- Reduced spending, and
- Protection of assets

Project Team

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Appendix C– Symbol LS2208 Product Fact Sheet

Appendix D – Product Comparison Tool

Executive Summary

The project management class Asset Management (AM) Team began work researching possible solutions to assist with the implementation of the Environmental Protection Agency's (EPA) Asset Management Program. The project management AM Team was tasked to analyze several barcode scanning tools; review data elements identified via the preliminary project to gather requirements to ensure all critical OAKS fields have been included for the future Asset Management system and list all minimum requirements for Ohio EPA to include in their agency-specific Policy and Procedure for Asset Management. This paper is limited to the analysis of several barcode scanning tools.

Three tools were identified based on recommendations and research. The tools are: Intermec 2410, Motorola MC75A and Symbol LS2208. The barcode scanners were compared using the following comparison tool located in Appendix D:

Product Quality Feature	2410	MC75A	LS2208
Weight	4	3	5
Battery life	4	3	5
Ease of use	4	3	5
Cost	3	2	5
Flexibility	4	5	2
Connectivity	3	5	2
Scanning performance	3	3	3
Durability	3	4	4
Average	3.5	3.5	3.9

Prior to the EPA Project Management Team starting the project, the project management AM Team would to recommend that the EPA Project Team follow up with the Department of Administrative Services (DAS) on the status of RFI bar code scanning (Ohio Department of Administrative Services, 2011). Also, once more information is obtained; it is recommended that the EPA Project Team add weights to the Product Comparison Table for the features that are

essential at the start of the project. The Team also recommends ensuring vendor support is available for the selected product, to make sure if any Application Programming Interface (API) is used it is compatible with the selected device and ensure other hardware, such as bar code printers, are compatible with the selected device.

Background

The Ohio Environmental Protection Agency (EPA) is currently in the process of updating the agency's asset management program. The project management class Asset Management (AM) Team was tasked to assist with this process. The AM Team started with a broad scope to research multiple asset management software applications for Ohio EPA. The AM Team met with members of the Ohio EPA Project Team to discuss requirements of the asset management project. After the meeting and through additional communications, it was decided the scope of the AM Team should be significantly narrowed to the following:

1. Analysis of several barcode scanning tools.
2. Review of all data elements identified via the preliminary project to gather requirements to ensure all critical Fiscal, Property Management, and IT fields have been included for the future Asset Management system to be built.
3. Identification and listing of all minimum requirements for Ohio EPA and all state agencies to include in their agency-specific Policy and Procedure for Asset Management based on the State of Ohio Asset Management Policy and Procedure updated in Dec 2011.

This particular information paper will only cover the first deliverable, "Analysis of several barcode scanning tool," along with providing other recommendations.

Methodology

While working through the project management process, several techniques were used to identify potential products and practices. The Delphi Technique was employed to e-mail subject matter experts (SME) in other state agencies. Several vendors were e-mailed and researched online. The AM Team met with one agency SME regarding the equipment and best practices within the agency. The team also utilized research already conducted by consulting groups such as Gartner. After compiling and reviewing a vast amount of data, undergoing a scope change and meeting with a state agency SME, several products were selected for comparison. An un-weighted product comparison tool (Appendix D) was used to rate the products on the following features: Weight, Battery Life, Ease of Use, Cost, Flexibility, Connectivity, Scanning Performance and Durability.

Products

Intermec 2410

The first reviewed product is the Intermec 2410. This scanner is basically a handheld computer that is designed for retail and light industrial environments (2410 Series Hand Held Computer Product Profile, 1999). The 2410 Series Hand Held profile can be found in Appendix A.



Intermec 2410

Using a scale from 1 to 5, 1 being very poor to 5 being very good, we scored the Intermec 2410 with a “4” for Weight as it weighs less than 14 ounces. The Battery Life also scored a “4” due to a fully charged battery lasting 8 to 10 hours. The Intermec 2410 also scored “4s” in Ease of Use and Flexibility since the device is fairly simplistic and can be used in multiple ways. The other features; Cost, Connectivity, Scanning Performance and Durability were all rated as Average with a score of “3”. The final overall score assigned to the Intermec 2410 taking all features into consideration is “3.5”. The comparison tool used to rate this device is located in Appendix D.

Motorola Premium 3.5G Enterprise Digital Assistant (EDA) MC75A

The next product the team reviewed is the Motorola MC75A. The MC75A, “addresses the top business mobility needs, offering maximum processing power, rugged design, flexibility in extending solution reach, data capture capabilities, connectivity options, security and manageability” (MC75A Premium 3.5 Worldwide Enterprise Digital Assistant (EDA) Specification Sheet, 2010). The MC75A Premium EDA profile can be found in Appendix B.



Motorola MC75A

The MC75A excelled in two areas, Flexibility and Connectivity, earning “5”s in both features. The MC75A is extremely flexible, as it is capable of a multi-mode data capture via a bar code scanner plus a color camera. The MC75A is also a cell phone, which adds to the Connectivity

feature. While most wireless bar code scanning devices require a wireless network or Bluetooth, the MC75A can connect using most worldwide carriers. The MC75A earned a “4” for the Durability feature since the drop specification is 5 feet at room temperature for multiple drops.

The Motorola had average “3” scores in Weight, Battery Life, Ease of Use and Scanning Performance. The MC75A scored a “2” in the area of Cost as a single unit ranges from \$2,100 to \$3,000. The final overall score assigned to the Motorola MC75A taking all features into consideration is “3.5”. The comparison tool used to rate this device is located in Appendix D.

Symbol LS2208

The final product the team reviewed is the Symbol LS2208. The LS 2208 is the simplest of the three products. The Symbol LS2208 “provides fast, reliable scanning in a durable, lightweight form factor, delivering enhanced productivity and efficiency while reducing your total cost of ownership” (Symbol LS2208 Handheld Scanner Specification Sheet). The Symbol LS2208 profile can be found in Appendix C.



Symbol LS2208

The Symbol LS2208 excelled in the first four categories earning “5”s for Weight, Battery Life, Ease of Use and Cost. The LS2208 is very light, weighing only 5.15 ounces. The Battery Life

is excellent, lasting 12 hours when fully charged. The LS2208 only has one button, so the Ease of Use ranks high. The Cost is by far least per unit at only \$138 each. The Durability ranked above average at a “4” due to the drop specification.

The LS2208 was ranked as a “3” for Scanning Performance while Flexibility and Connectivity were ranked a “2”. While easy to use, the LS2208 cannot be used for any other purpose and can only scan. Also, this device is limited in its Connectivity by Bluetooth in a 10 meter radius. The comparison tool used to rate this device is located in Appendix D.

Recommendations

The EPA Asset Project Management Team would like the EPA Project team to consider the following recommendations:

- Follow up with DAS on the status of the RFI for bar code scanning (Ohio Department of Administrative Services, 2011) prior to moving forward on the project
- Once more information is obtained closer to the start of the project, add weights to the features on the Product Comparison Table for the features that are essential at the start of the project
- Ensure vendor support is available for the selected product
- Ensure if any Application Programming Interface (API) is used, it is compatible with the selected device
- Ensure other hardware, such as bar code printers, etc. are compatible with the selected device

References

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HAND HELD COMPUTER

2410 Series

Benefits:

- **Small, lightweight design**
- **Flexible application environments**
- **Industry standard development and connectivity tools**
- **Upgradeable wireless and batch versions provide investment protection**
- **Long lasting Lithium Ion battery for full shift operation**
- **Survives 4-foot drops to concrete**

With its compact, lightweight packaging, the 2410 Series hand-held computers are designed for retail and light industrial environments. Weighing under 14 oz., the 2410 Series provides easy operation over extended periods.

As the newest addition to the Intermec 2400 product line, 2410 Series hand-held computers share applications with other members of 2400 family. You can run the same application on a stationary shop floor terminal, a 2410 Series hand-held computer, and a vehicle mount unit.

With its industry-standard internal PC card slot, the 2410 Series can adapt with your system as your data collection needs change. You can start with the 2410—a hardwired (batch) system—and upgrade to the 2415—an 802.11 standard wireless system—simply by sending it to an Intermec service center for an RF upgrade. The 2415 can also be upgraded with the latest technology so you can easily change radios to handle higher speeds and increased coverage as advances in standards such as 802.11 RF technology occur.

You can also count on the 2410 Series to put in a full day's work without recharging. Its state-of-the-art Lithium Ion battery is easy to recharge and can run 8 to 10 hours on a single charge. That



makes the 2410 ideal for time-intensive applications, such as in-store audits and re-stocking inventory. And, its high-contrast, scratch resistant display makes for easy reading in many environments. Best of all, 2410 Series hand held computers integrate seamlessly into your system, whether it is a terminal emulation, client/server or simple serial connection through a communications dock.

2410 Series

Physical characteristics

Length: 19.3 cm (7.6")

Width: 8.4 cm (3.3") at scanner; 5 cm (2") at grip

Height: 5.6 cm (2.2") at scanner; 4 cm (1.2") at grip

Weight (with standard battery):

Model 2410 (Batch): 374g (13.2 oz.)

Model 2415 (RF): 422g (14.9 oz.)

Add 43g (1.5 oz.) for high capacity battery

Display

CGA compatible backlit LCD displaying 16 lines of 20 characters per line (160 x 128 dot matrix) plus LED status indicators

Full 25 x 80 virtual screen with viewporting

U.S. and European character sets plus Big 5 and simplified Chinese, Korean, and Japanese

Keyboard

Elastomeric 55-key with full alphanumeric set with function keys or 37-key larger alphanumeric with function keys.

Options for U.S., Multilingual European, IBM 5250, and VT/ANSI layouts

Environmental

Operating temperature: -20° to 50°C (-4° to 122°F)

Storage temperature: -20° to 60°C (-4° to 140°F)

Humidity: Non-condensing (0 to 95% RH)

Bar Code Scanning Options

Integrated visible laser diode scanner

USA/Canada Class II, International Class 2

Depth of Field—Standard Range* (670nm) (measured for Code 39)

5 mil	9.4-15.7 cm	(3.7"-6.2")
10 mil	7.4-30.5 cm	(2.9"-12")
20 mil	10.2-63.5 cm	(4"-25")
30.0 mil	10.2-86.4 cm	(4"-34")
40.0 mil	12.7-99 cm	(5"-39")
55.0 mil	19.1-126 cm	(7.5"-49")
55 mil retroreflective	105-151 cm	(41"-59")
100 mil retroreflective	113-227 cm	(44"-89")

Depth of Field—Long Range* (650nm)

10 mil	29.4-49.8 cm	(11.6-19.6")
20 mil	21.8-98 cm	(8.6 - 38.6")
30 mil	24.4-192 cm	(9.6 - 75.6")
40 mil	24.4-204.7 cm	(9.6-80.6")
70 mil retroreflective	192-410.5 cm	(75.6")
100 mil retroreflective	212.3-532.4 cm	(83.6"-209.6")

Built-in 16 pin I/O connector for attaching Intermec decoded and undecoded scanners and wands. Adapter available.

Measured for Code 39

Bar Codes Supported

Code 39, 2 of 5, Interleaved 2 of 5, Codabar, UPC/EAN Code 128, Code 11, Code 93, Plessey, MSI, Code 16K, Code 49

Power

Operating: Lithium Ion battery pack, standard and high capacity

Memory

RAM: 1 MB, battery backed

Non-volatile Memory: 2MB. Option for 2MB additional (4MB total)

Standard Storage: 2 or 4MB SRAM

Integrated RF Module (2415)

Frequency: 2.4 GHz actual frequencies in use vary by country

Radio Type: WLL Forum OpenAir Compatible

Frequency Hopping Spread Spectrum (FHSS)

Radio Power Output: 100mW

Radio Data Rate: 800 Kbps or 1.6 Mbps

Range: Up to 150 meters radius (500 ft.) indoors
450+ meters radius (1,500+ ft) outdoors

Antenna: Internal

Serial Data Communications

Built-in 16-pin serial connector, 9-pin adaptor optional

RS232-C up to 38.4 Kbps

XMODEM, YMODEM for data transfer

Supports configurable Serial Protocol and XON/OFF

Host Support via Data Collection Server 300

Host Environments: IBM AS 400, Digital HP, UNIX, Windows NT

Connectivity: Ethernet, Token Ring, 100BASE-T, Twinax, Coax, SDLC

Communications: TCP/IP, SNA

Direct TCP/IP Support

Sockets interface or terminal emulation
Ethernet or Token Ring

Software Configurations

Programmable: Microsoft® C

Terminal Emulation: 5250 SNA and TELNET

ANSL/VT 100, 220, 320 TELNET

Screen mapping

Shock and Vibration Protection

Warranted for 4-foot drop to concrete

Regulatory Approvals

UL Listed, UL 1950 and C22.2 No. 950, TÜV Rheinland GS, EN 60950 and EN 60825-1, FCC Part 15, Canada, RSS210 and ICES-003, Class B, EN 55022/CISPR 22, Class B, ETS 300 328, ETS 300 826, Compliant with all European directives, CE marked.

Accessories

Battery charger, battery pack available in standard and high capacity, pistol grip handle, holster, belt loop, hand strap, serial communications dock, User manual, Programmer's Software Kit (PSK), EZBuilder™ Rapid Application Development software.

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Intermec

A UNOVA Company



MC75A

Premium 3.5G Worldwide Enterprise Digital Assistant (EDA)



The next evolution in EDA power

Motorola's MC75A takes its place as one of the world's premier EDAs, offering more enterprise-class features and functionality than any other device in its class. Turbocharged with many Motorola Mobility Architecture eXtension (MAX) features, the MC75A addresses the top business mobility needs, offering maximum processing power, rugged design, flexibility in extending solution reach, data capture capabilities, connectivity options, security and manageability. Two options — 3.5G WWAN/WLAN and WLAN only — enable enterprises to standardize on a single device for workers inside the four walls and out in the field. Add a field proven ergonomic design that is easy-to-hold, easy-to-carry and easy-to-use, and you have maximum value in a minimum footprint — all at the right price.

Maximum power

The MC75A offers the most robust processing platform in the EDA class today, from operating system to memory architecture, including Microsoft Windows Mobile 6.5; the fastest processor, the PXA320 @ 806 MHz; and 256 MB RAM/1GB Flash with a user accessible microSD slot to accommodate up to 32GB of additional storage. As a result, the MC75A delivers consistent desktop-like performance, regardless of whether your applications incorporate high resolution video, documents and images or you need thick client applications.

Motorola's most rugged EDA

With Motorola MAX Rugged, you can count on reliable operation inside and outside the enterprise — the MC75A meets or exceeds MIL-STD 810G requirements for stress (drop) testing as well as IEC specifications for tumble and sealing. The MC75A is built to survive drops to concrete from as high as 5 ft./1.52 m. Motorola's tumble drum test proves that the device can endure 1,000 consecutive 1.6 ft./0.5 m tumbles (2,000 hits) — and still deliver dependable performance. And the IP54 sealing rating enables use in dusty environments and exposure to rain or spills. The result is a dramatic reduction in repair requirements and downtime, providing a strong return on asset (ROA).

Maximum flexibility

The MC75A offers a level of flexibility that puts it in a class of its own, with a feature set that includes many Motorola-unique capabilities.

The only EDA to offer five keypads. Numeric, QWERTY, DSD, AZERTY and QWERTZ keypads enable maximum data entry simplicity for virtually any application anywhere in the world. Enterprises can standardize on a single device for many different workgroups with different application needs, simplifying the mobility architecture as well as reducing training and support costs.

Motorola Integrated Voice Solutions: unparalleled integrated voice interoperability. Inside the four walls, different workgroups often require different types of devices that run on different networks — from mobile computers and VoWLAN devices to two-way radios. The result is 'islands of voice' — the inability for cross-communications between device families. The MC75A eliminates this issue. The integrated TEAM Express voice client enables push-to-talk instant communications with other TEAM Express-enabled Motorola mobile computers, TEAM smartphones and two-way radios (Radio Link Server required). With powerful and highly cost-effective one-to-one and one-to-many voice communications between all workers inside the four walls, the enterprise enjoys lightning

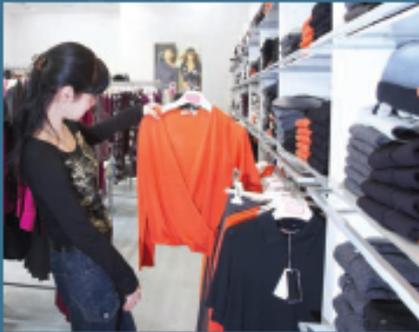
fast response times, improved productivity and decision-making — as well as increased customer service, satisfaction and retention.

Motorola MAX Locate for more robust location-based applications. Integrated aGPS/GPS technology opens up a world of possible location-based applications — including real-time navigation, better fleet management, the ability to geostamp a photo for proof of condition or capture coordinates for proof of delivery in transportation and logistics or proof of service for inspections and maintenance. The best-in-class implementation includes the SiRFstarIII GSC3f/LP GPS chipset for robust coverage even in challenging urban canyons and areas of dense foliage, providing more users with location-based services in more areas. And the low-power chipset delivers top-notch accuracy with minimal power requirements, conserving battery power.

Enterprise-class motion sensing with Motorola MAX Sensor. MAX Sensor enables business-class implementation of one of the most popular consumer-style cellular phone technologies in the MC75A — the accelerometer. In addition to the typical ability to automatically switch between portrait and landscape display based on the orientation of the device, many additional features can be enabled in seconds, right out of the box. Power management features help ensure full shift battery power. For example, the device can automatically revert to sleep mode if movement is not detected in a specified period of time, or if the display is face down. The ability to detect and log drops helps increase worker accountability for device condition. And the open architecture allows enterprises to integrate the accelerometer data into customized applications that can help improve the safety of field service technicians working in remote areas and prevent device theft.

MAX Data Capture for maximum business functionality. The ability to capture virtually any type of data and perform almost any business function ensures that the MC75A can meet your application needs today and well into the future. As the inventor of bar code scanning, Motorola offers unparalleled 1D and 2D scanning technology. The SE950 scan engine provides best-in-class 1D bar code scanning performance, while the SE4500, Motorola's revolutionary imager engine, delivers equally stunning performance on 1D and 2D bar codes. And both engines offer omni-directional scanning, eliminating the need to align bar code and scanner, and providing the intelligence to capture even damaged and poor quality bar codes. The integrated 3.2 megapixel autofocus color flash-enabled camera enables the easy capture of high-resolution photographs, video footage and documents — complete with legible fine print.

The MC75A in action inside the enterprise walls



Retail

The MC75A enables the complete mobile associate, providing the power to answer customer questions, manage inventory, line bust, process purchases and more, right on the spot.



Manufacturing

The MC75A offers the rugged design required to survive life in a manufacturing plant, enabling remote system monitoring, inventory counts, replenishment, ID verification and more.



Healthcare

Able to withstand wipe downs and sanitization, the MC75A enables the many mobile point of care (POC) applications, from medication administration and specimen collection to nurse call, charge capture and inventory management.

Comprehensive accessory family expands solution reach

The Magnetic Stripe Reader (MSR) and Mobile Payment Module (MPM) enable workers to process purchases virtually anywhere in the world — from the retail sales floor to the customer's doorstep. Third party peripherals, such as an RFID reader, enable users to leverage RFID data to streamline and error-proof inventory and other workflows. Motorola's Bluetooth®-enabled RS507 Imager, worn on two fingers, provides hands-free scanning convenience. And a trigger handle allows workers to switch between handheld and industrial-style gun form factors in seconds, providing comfort for the most scan intensive tasks.

Maximum connectivity options

With the MC75A, your workers hold the universe of wireless connectivity options in their hands. WWAN functionality provides a connection to the fastest available cellular networks. Support for 3.5G HSDPA or CDMA EVDO Rev A provides workers anywhere in the world with high-performance broadband speeds. Comprehensive 802.11a/b/g support provides a seamless cost-effective WLAN connection inside the four walls and in hot spots — and support for 802.11a allows the granular segmentation of voice traffic, ensuring quality of service for VoWLAN communications. Bluetooth provides a wireless connection to a wide range of Bluetooth-enabled peripherals, such as headsets and printers. Support for the latest Bluetooth technology — v2.1 with EDR — provides simple one-step easy pairing, improved security and reduced power consumption. And support for

IrDA enables wireless communications with a wide range of existing business equipment — from medical equipment to fax machines.

Government-grade security with Motorola MAX Secure

The Motorola MAX Secure feature set keeps your data safe and secure, regardless of whether the MC75A is connected to the WWAN or the WLAN. Native FIPS 140-2 Level 1 certification and support for the most advanced encryption and authentication algorithms as well as Virtual Private Networks (VPNs) provides the compliance required for government level applications as well as stringent industry regulations — including PCI in retail and HIPAA in healthcare. And Motorola's deep knowledge of wireless infrastructure enables the integration of FIPS and other security requirements without the typical impact on WLAN performance.

Maximum ease of application development and device manageability

In addition to the right set of features for your users and applications, the MC75A also offers the functionality required to reduce IT time and cost, including:

Rapid and cost-efficient application development. Motorola MAX MPA (Motorola Platform Architecture) provides an industry standard platform that enables easy integration into your existing technology environment. Since all Motorola mobile computers share this common platform, existing applications developed for other Motorola mobile computers can be ported effortlessly and seamlessly to the MC75A,

The MC75A in action in the field



Field Service/Sales

The MC75A supports robust automation out in the field, enabling real-time dynamic work order assignment, proof of service, sales order management, asset management and the ability to process COD transactions.



T&L

With a rugged design that can survive life in a truck, the MC75A enables real-time pick-up and delivery, inventory management, proof of location and condition and more.



Government

Its rugged design and FIPS 140-2 certification enable state, local and federal governments to leverage the MC75A to improve operational efficiency and better protect revenues — and constituents.

enabling exceptionally rapid deployment and improving the return on investment for existing applications. Additionally, Motorola's robust award winning partner channel provides access to a world of well-tested best-in-class line of business applications, further reducing application development time and costs.

Another Motorola tool, PocketBrowser, is built on Pocket Internet Explorer and Internet Explorer, providing a familiar and easy-to-use environment that enables the simple and rapid development of applications that incorporate the wide range of advanced data capture capabilities integrated into the MC75A — from bar code scanning to signature capture.

Comprehensive centralized tools for cost-effective day-to-day management. Compatibility with the Motorola Mobility Suite enables extraordinary centralized control of your MC75A devices. Motorola Mobility Services Platform (MSP) allows IT to remotely stage, provision, monitor and troubleshoot tens of thousands of devices inside and outside the four walls virtually anywhere in the world, all from a central location, radically reducing one of the largest costs associated with mobility — day-to-day management. Device-level intrusion protection and Mobile Virtual

Private Network (VPN) solutions allow the addition of extra layers of security to protect data that is resident on the device and in transit to and from the MC75A and your network. And AppCenter allows enterprises to easily define which features and software applications users can access, preventing unauthorized device usage that could reduce productivity.

The Motorola advantage: world class partners and world class support

Motorola's award-winning partner ecosystem offers a best-in-class, broad set of ready-to-go and custom applications for a wide variety of industries, minimizing deployment time and cost. And since even rugged devices require a support plan, Motorola offers Service from the Start with Comprehensive Coverage to help keep your MC75A up and running at peak performance. This unique all-inclusive service significantly reduces your unforeseen repair expenses by covering normal wear and tear as well as internal and external components damaged through accidental breakage — all at no additional charge. And options such as Commissioning Service and Express Shipping help to further minimize downtime in the unlikely event your device requires repair.

For more information on how you can leverage the benefits of the MC75A in your enterprise, please visit us on the Web at www.motorola.com/MC75A or access our global contact directory at www.motorola.com/enterprise/contactus

MOTOROLA'S MC75A:

Maximum features...maximum functionality...maximum value.

Maximum power

Powerful microprocessor designed for mobility: PXA320 @ 806 MHz
Desktop-like multimedia performance optimized for longer shift life

Microsoft's latest operating system: Windows® Mobile® 6.5
Increased interoperability with existing enterprise infrastructure; enhanced security features; more flexible development platform; improved mobile messaging collaboration

256MB RAM/1GB Flash

Provides memory space required to enable robust performance for database applications

User accessible microSD card slot

Provides additional memory and expandable functionality up to 32GB

Maximum rugged design

Motorola MAX Rugged. Industry-leading drop, tumble and sealing specifications

Lightweight yet rugged; built for year-round use in nearly any environment

Maximum connectivity options — and maximum wireless performance

3.5G WWAN: GSM HSDPA or CDMA-EVDO Rev A broadband connectivity over the cellular network

High performance wireless broadband voice and data anywhere in the world:

- Connection to most carriers in the world with one platform
- Best in class cellular broadband throughput
- Integrated voice and data services: allows workers to conduct a phone call while maintaining a data connection (where supported by carrier)*
- Internal WWAN diversity antenna provides better signal reception and a more dependable connection

WLAN: 802.11a/b/g tri-mode radio; comprehensive VoIP support

Cost-effective voice and data connectivity in the office and hot spots: 802.11a enables segmentation of voice traffic to protect voice quality

WPAN: Bluetooth® v2.1 with EDR**

Wireless connectivity to modems, printers, headsets and more; additional profiles for expanded connectivity to more device types with either Microsoft or Stonestreet stacks; v2.1 simplifies pairing, improves security and reduces power consumption

IrDA

Wireless connectivity to legacy printers and other business equipment

Maximum manageability

Motorola MAX MPA: Mobility Platform Architecture 2.0

Provides the latest best-in-class technology architecture; preserves existing application investments by enabling easy and cost-effective porting of applications from other Motorola mobile computers

Comprehensive centralized device management

Compatibility with Motorola Mobility Services Platform (MSP) and Motorola Mobility Suite provides superior centralized and remote management of all devices anywhere in the world — from a single console

Maximum security

Motorola MAX Secure

FIPS 140-2 certification and support for the most advanced encryption and authentication algorithms as well as Virtual Private Networks (VPNs) enables compliance with the most stringent industry security regulations, including sensitive government applications

Maximum flexibility

Motorola MAX Data Capture: multi-mode data capture via a bar code scanner plus a color camera

Ability to capture high quality pictures, documents and signatures as well as 1D and 2D bar codes in a single device improves workforce automation, increases productivity and reduces data errors with:

- Motorola's revolutionary 2D imager: delivers unparalleled laser-equivalent performance on 1D bar codes; reads damaged and poor quality codes; enables omni-directional reading
- 3.2 megapixel autofocus flash-enabled color digital camera designed to meet the needs of enterprise class applications
 - Autofocus provides superior image quality for greater application flexibility — including document capture
 - User controllable flash enables workers to activate or de-activate the flash as needed
 - In bar code reading mode, the screen reticule provides an aiming aid to ensure accurate first-time capture of bar codes
 - Preserves application investment: bar code scanning applications that utilize the laser scanner or imager on other Motorola mobile computers require little if any changes, reducing application development costs and enabling rapid deployment

Motorola MAX Sensor

Enterprise-class Interactive Sensor Technology (IST) enables leading edge motion-based applications, including dynamic screen orientation, power management and free-fall event logging

Motorola MAX Locate: SIRFstarIII GSC3ef/LP GPS chipset

Integrated, autonomous and assisted GPS support for robust location-based applications; high performance, power-efficient processor capable of acquiring and maintaining a signal lock in areas where signals are typically weak, expanding the coverage area for GPS applications; faster time to first fix (TTFF); flexibility to operate in either standalone or assisted GPS (aGPS) mode (carrier dependent) for faster and more accurate positioning — especially in challenging areas

Multiple keyboard options: Numeric, QWERTY, DSD, QWERTZ and AZERTY

Flexibility to meet diverse user and application needs

High quality speaker, microphone and receiver

Superior voice quality and performance

Multiple voice modes: handset, headset and speakerphone

Flexibility to use the right mode at the right time

3.5 inch color high definition VGA display (640 x 480) with the latest in LCD technology

Easy to view in any lighting; supports display of high resolution images including video and maps

Backwards compatible with MC70 and MC75 accessories

Provides investment protection for existing investments

Comprehensive accessory suite

Availability of add-on functionality expands solution reach, protects investment and maximizes TCO with rich accessory ecosystem that offers the ability to read debit and credit cards around the world, hands-free scanning, RFID and more

MC75A Specifications

Physical Characteristics	
Dimensions:	WWAN: 7 in. L x 3.3 in. W x 1.7 in D 17.78 cm L x 8.4 cm W x 4.4 cm D WLAN: 6 in. L x 3.3 in. W x 1.7 in D 15.24 cm L x 8.4 cm W x 4.4 cm D
Weight (including standard battery):	WWAN standard 1.5X battery: 14.9 oz./423 g WLAN standard 1.5X battery: 14 oz./398 g
Display:	Transflective color 3.5" full VGA with backlight, 640 x 480
Touch Panel:	Glass analog resistive touch
Backlight:	LED backlight
Main Battery:	Rechargeable Lithium Ion 3.7V, 3600 mAh Smart Battery
Ext. Cap. Battery:	Optional 3.7V, 4900 mAh Smart Battery
Backup Battery:	NI-MH battery (rechargeable) 15mAh 2.4V (not user-accessible)
Expansion Slot:	microSD slot with SDHC Support (up to 32GB)
Network Connections:	Ethernet (via cradle); full-speed USB, host or client
Notification:	Vibrator and LED
Keypad Options:	Numeric; QWERTY; DSD; AZERTY; QWERTZ
Audio:	VoIP/WAN; Vo/WLAN; TEAM Express compliant; support for wired and wireless (Bluetooth) headsets; headset, handset and speaker phone modes
Performance Characteristics	
CPU:	PXA320 @ 806 MHz processor
Operating System:	Microsoft® Windows Mobile® 6.5 Classic and Professional
Memory:	256MB RAM; 1GB Flash
Interface:	RS-232, USB 1.1
User Environment	
Operating Temperature:	14° F to 122° F/-10° C to 50° C
Storage Temperature:	-40° F to 158° F/-40° C to 70° C (w/o battery)
Humidity:	95% non-condensing
Drop Specification:	Multiple 5 ft. drops to concrete at room temperature; Multiple 4 ft. drops to concrete across the operating temperature range; meets and exceeds applicable MIL-STD 810G specifications
Tumble Specification:	1,000 1.6 ft./5m tumbles (2,000 drops); per applicable IEC tumble specifications
Sealing:	IP54 per applicable IEC sealing specifications
IRDA:	Infra-red port for connection to printers and other devices
Clock:	Integrated real time clock
Light Immunity:	Readability: Incandescent — 450 ft. candles; Sunlight — 8000 ft. candles; Fluorescent 450 ft. candles
Electrostatic Discharge (ESD):	±15kV air discharge, ±8kV direct discharge

Battery Performance	
Standby time:	150 hours
Talk time:	5 hours
User profiles:	Outdoor WAN+GPS, 15min/hour voice communication, 10kb transmission every 10 min, and GPS on all time, 8 hours of operation. Outdoor Voice, 15 min/hour voice communication, 8 hours of operation, and 75 hours standby time.
Note: Performance metrics above were measured with Battery reserve option set the highest (72 hours)	
Wireless WAN Data and Voice Communications	
WWAN Radio:	GSM: HSDPA; CDMA: EVDO Rev A
GPS:	Integrated, Autonomous and Assisted-GPS (A-GPS) through SUPL; SIRFstarIII GSC2(LP) chipset
Wireless LAN Data and Voice Communications	
WLAN Radio:	Tri-mode IEEE® 802.11a/b/g
Data Rates Supported:	1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48 and 54 Mbps
Operating Channels:	Chan 6-165 (5040 – 5825 MHz) Chan 1-13 (2412-2472 MHz) Chan 14 (2484 MHz) Japan only Actual operating channels/frequencies depend on regulatory rules and certification agency
Security:	WPA2, WEP 40 or 128 bit, TKIP, TLS, TTLS (MS-CHAP), TTLS (MS-CHAP v2), TTLS (CHAP), TTLS-MD5, TTLS-PP, PEAP-TLS, PEAP (MS-CHAP v2), AES, LEAP, CCW4 certified; RPS 140-2 certified
Spreading Technique:	Direct Sequence Spread Spectrum (DSSS) and Orthogonal Frequency Division Multiplexing (OFDM)
Antenna:	Internal for LAN, External for WAN
Voice Communication:	Integrated Voice-over-IP ready (P2P, PBX, PTT), Wi-Fi™-certified, IEEE 802.11a/b/g direct sequence wireless LAN
Wireless PAN Data and Voice Communications	
Bluetooth:	Class II, v2.1 with Enhanced Data Rate (EDR) Integrated antenna
Data Capture Options	
Scanning:	1D Scanner; 2D Imager; 3.2 MP auto-focus flash-enabled digital color camera with symbology decode software
Four Configuration Options:	1D laser scanner; 2D Imager; 1D laser scanner and camera; 2D Imager and camera
Color Camera	
Resolution:	3.2 megapixel
Illumination:	User controllable flash
Lens:	Auto focus

1D Laser Scanner (SE950)

Range on 100% UPCA:	24 in./60 cm
Resolution:	4 Mil minimum element width
Roll:	±35° from vertical
Pitch Angle:	±65° from normal
Skew Tolerance:	±50° from normal
Ambient Light Immunity:	10,000 ft. candles/107,640 lux
Scan Rate:	104 (+/- 12) scans/sec (bi-directional)
Scan Angle:	47° ± 3° default; 35° ± 3° reduced

2D Imager Engine (SE4500-SR)

Focal Distance:	From center of exit window: SR – 7/5 in./19 cm
Sensor Resolution:	752 x 480 pixels
Field of View:	Horizontal: 40°; Vertical: 25°
Skew Tolerance:	±60°
Pitch Tolerance:	±60°
Roll Tolerance:	360°
Ambient Light Immunity:	9,000 ft. candles/96,900 lux
Aiming LED (VLD):	655 ± 10 nm Laser
Illumination Element (LED):	625 ± 5 nm LEDs (2x)

Motorola Interactive Sensor Technology

Motion-sensor: 3-axis accelerometer that enables motion-sensing applications for dynamic screen orientation, power management and free-fall detect

Peripherals and Accessories

Communication and Charging Cables:	Serial and USB v1.1 charging cables, printer cables, vehicle charging cable, power/charging cable
Battery Chargers:	4-slot battery charger (1X, 1.5X and 2.5X), universal battery charger (requires adapters for 1X, 1.5X and 2.5X capacity batteries)
Vertical-specific attachments:	Snap-on Magnetic Stripe Reader (MSR); Payment Snap-on (Debit and Credit); Mobile Payment Module; Mobile Payment Module with Chip and PIN
Electrical Safety:	Certified to UL / cUL 60950-1, IEC / EN60950-1
EMI/RFI:	USA: FCC Part 15; Canada: ICES 003 Class B; Europe: EN55022 Class B, EN 55024, EN60601-1-2; Australia: AS/NZS CISPR A 22

For countries outside USA, Canada, European Economic Area, Japan or Australia consult your local Motorola representative

For a complete list of MC75A Peripherals and Accessories, please visit www.motorola.com/mc75a

Regulatory

Electrical Safety:	Certified to UL / cUL 60950-1, IEC / EN60950-1
Environmental:	RoHS-compliant
WLAN and Bluetooth:	USA: FCC Part 15.247, 15.407 Canada: RSS-210 EU: EN 300 328, EN 301 893 Japan: ARIB STD-T33, ARIB STD-T66, ARIB STD-T71 Australia: AS/NZS 4268
Quad Band GSM/EDGE, plus Tri-band HSDPA:	Global: 3GPP TS 51.010, 3GPP TS 34.121, 3GPP TS 34.123 GCF approved module USA: FCC Part 22, Part 24 Canada: RSS-132, RSS-133 EU: EN301 511, EN301 908 Australia: AS/ACIF S042.1&3
CDMA-EVDO Rev. A:	Verizon and Sprint (For the latest information, contact your local Motorola representative)
RF Exposure:	USA: FCC Part 2, FCC OET Bulletin 65 Supplement C Canada: RSS-102 EU: EN 50360 Australia: Radiocommunications Standard 2003
EMI/RFI:	North America: FCC Part 15, Class B Canada: ICES 003 Class B EU: EN55022 Class B, EN 301 489-1, EN 301 489-3, EN 301 489-7, EN 301 489-17, EN 301 489-24, EN 60601-1-2 Australia: AS/NZS CISPR A-22
Laser Safety:	IEC Class2/FDA Class II in accordance with IEC60825-1/EN60825-1

For countries outside USA, Canada, European Economic Area, Japan or Australia consult your local Motorola representative

Warranty

The MC75A is warranted against defects in workmanship and materials for a period of 12 months from date of shipment, provided that the product remains unmodified and is operated under normal and proper conditions.

The MC75A is a true global product that is supported in all industrial countries. Please visit www.motorola.com for a complete list of supported countries.



MAX
Rugged



MAX
Secure



MAX
Sensor



MAX
Data Capture



MAX
Location



MAX
MPA

* Simultaneous delivery of mobile voice, data and GPS services is carrier dependent. The GSM HSDPA cellular network supports all three services simultaneously. The CDMA EVDO Rev. A network enables the simultaneous delivery of GPS and either voice or data.

** The MC75 offers the option of either the standard Microsoft Bluetooth stack or the platform based Stonestreet One stack, for enhanced application portability.

SPECIFICATION SHEET

MC75A
Premium 3.5G Worldwide Enterprise Digital Assistant (EDA)



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Symbol LS2208

Handheld scanner



FEATURES

Durable construction:
single board construction;
meets Motorola's
stringent 5 ft. drop tests;
scratch-resistant tempered
glass exit window

Designed for continuous
usage all day, every day;
significantly reduces
downtime and repair costs

**High performance 1D
linear scanner**

Accurate first time scanning;
always ready for the next
scan; increased productivity
resulting in shorter
check-out lines and better
customer service

Wide working range:
contact to 17 in./43 cm on
100% UPC/EAN symbols

Improves productivity

Increased productivity, lower TCO

The Symbol LS2208 handheld scanner from Motorola offers high performance scanning at a moderate price point. From the retail point-of-sale and backroom to the patient bedside or school book checkout, the Symbol LS2208 provides fast, reliable scanning in a durable, lightweight form factor, delivering enhanced productivity and efficiency while reducing your total cost of ownership (TCO).

High performance scanning — fast

With aggressive scanning capabilities and a wide working range, the Symbol LS2208 accurately captures data fast, helping employees work quickly and efficiently. And you'll be up and running fast, because the Symbol LS2208 is easy to deploy and use, thanks to its plug-and-play installation and intuitive, user-friendly design, which requires little or no training. Plus the ergonomic, balanced form factor reduces user fatigue to maximize user comfort.

Durable, future-proof construction

The Symbol LS2208 is engineered for continuous, heavy usage all day, every day and has been tested to withstand multiple 5 ft./1.5m drops to concrete. The patented single board construction eliminates a common point of failure — the interconnection between multiple boards, and the liquid polymer scan element delivers integral shock protection to

further ensure reliable operation. Scratch-resistant tempered glass helps preserve bar code scanning accuracy. Integrated multiple interfaces, universal cable compatibility and support for emerging symbologies provide the investment protection you need to help ensure that the scanner you buy today will work with the system you use tomorrow.

Proven quality you can trust

When you choose the Symbol LS2208, you receive the added assurance of purchasing a product from Motorola — the global leader in handheld bar code scanning with millions of scanners in use every day by the world's largest retailers worldwide. And since even the most durable scanners require a support plan, Motorola's Service from the Start Advance Exchange Support provides next-business-day delivery of a replacement device for true service peace of mind. This offering also includes Motorola's unique Comprehensive Coverage, which extends normal wear and tear to cover accidental damage to exit windows, scan elements, housings and more at no extra charge — virtually eliminating your unforeseen repair expenses.

For more information about the Symbol LS2208 handheld scanner, contact us at +1.800.722.6234 or +1.631.738.2400, or visit us on the Web at: www.symbol.com/LS2208

SPECIFICATION SHEET

Symbol LS2208

Multiple interfaces: RS232, USB, KBW (keyboard wedge), Wand, IBM 468X/9X, Synapse and Undecoded in one scanner
Simplifies installation and integration; future-proof solution helps ensure compatibility with your host/POS today and tomorrow

Plug-and-play; universal cable; intuitive scanning
Rapid deployment; single cable connects to any computing environment; practically eliminates setup and training time for faster return on investment

Ergonomic and lightweight design
Reduces user fatigue with sleek, balanced form for maximum user comfort and productivity

Hands-free Intellistand™
Enables presentation scanning and easy switching between hands-free and handheld modes

Advanced Data Formatting (ADF)
Enables users to modify data prior to sending to host computer, reducing costly modifications to the host software

Symbol LS2208 Specifications

Physical Characteristics

Dimensions:	6 in. H x 2.5 in. W x 3.34 in. D 15.2 cm H x 6.3 cm W x 8.4 cm
Weight:	5.15 oz./146 gm
Voltage and Current:	5 volts +/- 10% at 130 mA typical, 175 mA max
Power Source:	Host power or external power supply
Color:	Cash Register White or Twilight Black

Performance Characteristics

Scanner Type:	Bi-directional
Light Source:	650 nm visible laser diode
Scan Element Frequency:	50Hz
Scan Rate:	100 scans per second typical
Nominal Working Distance:	From contact to 17 in./43 cm on 100% U.P.C./EAN symbols
Print Contrast:	20% minimum reflective difference
Roll (Tilt): ¹	1 +/- 30 degrees
Pitch: ²	2 +/- 65 degrees
Skew (Yaw): ³	3 +/- 60 degrees
Decode Capability:	UPC/EAN, UPC/EAN with Supplementals, UCC/EAN 128, Code 39, Code 39 Full ASCII, Code 39 TriOptic, Code 128, Code 128 Full ASCII, Codabar, Interleaved 2 of 5, Discrete 2 of 5, Code 93, MSI, Code 11, IATA, RSS variants, Chinese 2 of 5

Interfaces Supported: RS232, Keyboard Wedge,
Wand, IBM 468X/9X, USB, Synapse and Undecoded

User Environment

Operating Temp.:	32° to 122° F/0° to 50° C
Storage Temp.:	-40° to 158° F/-40° to 70° C

Humidity:	5% to 95% relative humidity, noncondensing
Drop Specifications:	Unit functions normally after repeated 5 ft./1.5 m drops to concrete
Ambient Light Immunity:	Immune to direct exposure of normal office and factory lighting conditions, as well as direct exposure to sunlight
Electrostatic Discharge:	Conforms to 15 kV air discharge and 8 kV of contact discharge

Accessories

Hands-Free Intellistand™: 20-61019-01 or 20-61019-02

Regulatory

Electrical Safety:	Certified to UL1950, CSA C22.2 No. 950, EN60950/IEC950
EMI/RFI:	FCC Part 15 Class B, ICES-003 Class B, European Union EMC Directive, Australian SMA, Taiwan EMC, Japan VCCI/MITI/Dentori.
Laser Safety:	CDRH Class II, IEC Class 2
Environmental:	Compliant with RoHS directive 2002/95/EEC

Warranty

The Symbol LS2208 is warranted against defects in workmanship and materials for a period of 5 years (60 months) from date of shipment, provided that the product remains unmodified and is operated under normal and proper conditions. See full warranty for details.

1 - Roll (Tilt): Controlled by rotating the wrist clockwise or counterclockwise

2 - Pitch: Controlled by dropping or raising the wrist

3 - Skew (Yaw): Controlled by rotating the wrist from left to right or vice versa



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About BarcodesInc

Who We Are

BarcodesInc is North America's leading provider of barcode, mobile computing, point of sale and RFID products and solutions. For over fifteen years, we have worked hard to earn a reputation for being dedicated, reliable and customer-oriented.

We Owe Our Success To You

BarcodesInc continues to grow year after year. We have one overriding objective: Focus on you, the customer. We work hard to listen carefully and tailor our solutions to meet your needs. Then, we make ordering easy for you while providing a great value. Our goal is to build a growing relationship with you, and we appreciate the opportunity to serve you.

Why Choose BarcodesInc?

Dedicated Account Team

Our Account Managers will not compromise when it comes to providing you top-notch service. Your Account Manager is the primary point of contact for your business and makes it a priority to get to know you, your company and all your needs.

Highly-Trained Technical Support

Our technical staff has the broadest knowledge and every significant certification in the industry. One of our friendly experts is always available to suggest products and solutions for any situation.

Incredible Value

Our purchasing power means big savings for you. Whatever your project, our team will work hard to deliver a solution that fits your budget.

Largest Inventory in the Industry and Same-Day Shipping

Whatever your barcoding, mobile computing, or printing needs, we will fill your order and ship it the same day.

Premier Access to Top Manufacturers

BarcodesInc maintains strong strategic partnerships with the leading manufacturers in barcoding, mobile computing, printing and RFID.

Responsive Customer Service

Every phone call and email is responded to promptly, completely and accurately by our customer service team.

Easy Returns

Damaged, defective or incorrectly ordered goods may be returned without hassle.

BRANDS





Product Comparison Chart

Product Quality Feature	2410	MC75A	LS2208
Weight	4	3	5
Battery life	4	3	5
Ease of use	4	3	5
Cost	3	2	5
Flexibility	4	5	2
Connectivity	3	5	2
Scanning performance	3	3	3
Durability	3	4	4
Average	3.5	3.5	3.9

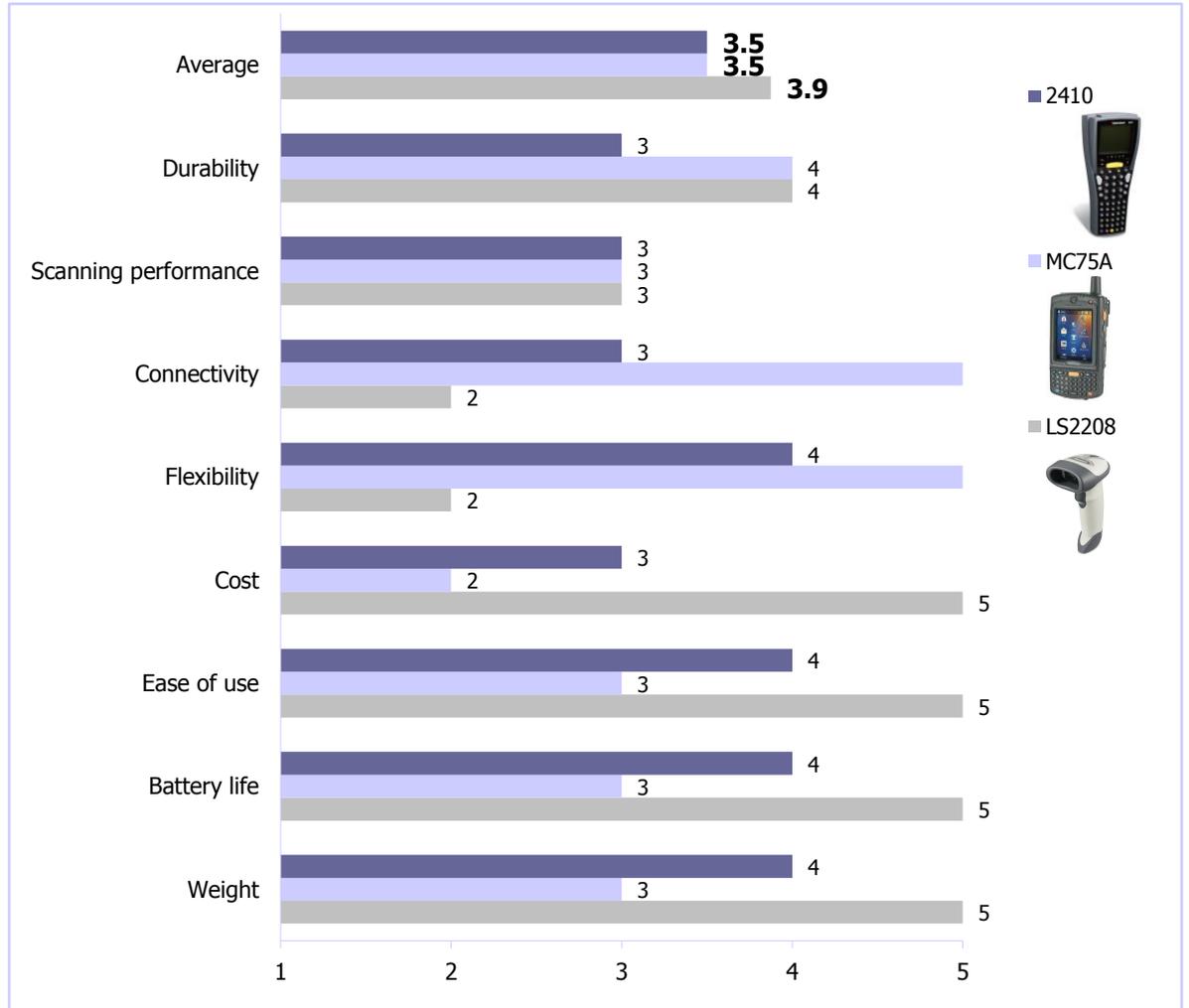
Legend:

2410=Intermec 2410

MC75A=Motorola Premium 3.5G Enterprise Digital Assistant (EDA)

LS2208=Symbol LS2208

Scale from 1 to 5
(1 = very poor, 2 = poor, 3 = average, 4 = good, 5 = very good)



NOTES

Product Quality Feature	2410	MC75A	LS2208
Weight	Under 14 oz	14 to 15 oz	5.15 oz
Battery Life	8-10 hours	5 hours	12 hours
Ease of use	Only used for scanning, lots of entry capabilities	Complicated, can be used for multiple purposes, to include cell phone	Only one button
Cost	\$1,400	US\$2,095 to US\$3,035	\$138
Flexibility	Multiple ways to use	Lots of uses, multi-mode data capture via a bar code scanner plus a color camera	Only one use
Conectivity	Hardwired, upgraded to wireless	3.5G WWAN, connect to most worldwide carriers	Bluetooth, 10 m
Performance	-20 to 50 degree C	-10 C to 50 C, 104 scans per sec	0 to 50 C, 100 scans per sec
Durability	4 ft. drop	5 ft. drop	5 ft. drop



Ohio EPA Asset Management Required Data Elements w/suppl. information for use in AM System Build
as of May 13, 2012

Ohio EPA Asset Mgmt. Required Data Elements for new System as of May 14, 2012

	Data Elements or Data Fields	Fiscal	IT	Property Mgmt	DAS policy rqmt.
	Accounting Date - Date that the transaction was booked or sent to accounting in the system. (Default Format: yyyy-mm-dd).			X	
	Acquisition Code	X			X
	Acquisition Date - Date the asset was acquired. (Default Format: yyyy-mm-dd).	X			X
1	*Add			X	
2	*Agency ID# (for example: EPAXXXX (Asset ID populated by OAKS))	X		X	
	Agency Use - EPA (accounting code that explains funding type)	X		X	
	*ALI - Appropriation Line Item	X		X	X
3	*AMT1 - corresponding \$ amt. of primary funding source	X		X	
	AMT(n) - corresponding \$ amt. of add'l funding sources	X		X	
	Asset Category	X	X	X	X
	Asset Class	X		X	X
	Asset ID - Asset ID is the distinct number assigned to an asset when it is entered into the system. It uniquely defines an asset within a	X		X	
	Business Unit	X	X	X	X
	Asset Status	X		X	
	Asset Status Long Descr	X			
	Condition Code				X
	Cost	X	X	X	X
###	*Custodian Name		X	X	X
###	*Damage (confirm in OAKS?)			X	
###	*Date entered	X		X	
###	*Date in inventory	X		X	
###	*Date of ACQ/Date received	X			
###	*Date out of inventory		X	X	
###	*Department – e.g. EPAXXXXXX	X	X	X	X
###	*Depreciated value calculated by OAKS	X			
###	*Description	X	X	X	X
	Disposal Code ID	X			X
###	*Division	X		X	
	Document ID	X		X	
###	*Equipment type (Category, type, description, profile in OAKS)	X	X	X	

Ohio EPA Asset Management Required Data Elements w/suppl. information for use in AM System Build
as of May 13, 2012

###	EPEAT Level (federal regulation) OAKS has open fields		X		
	Fiscal Year	X			
###	*FS(n)	X		X	
###	*FS1 – The primary funding source	X		X	
	Fund Code	X	X	X	X
###	*Funding sources(s)	X		X	
###	*Grant ID -EPAXXXXX	X			
###	*Inventory tag number	X		X	
###	License #		X		
###	License Expiration Date (?)		X		
###	*Location	X	X	X	
	Location Building	X		X	
###	*Location Code	X	X	X	X
	Location Description	X		X	
	Location Floor Number			X	
###	*Loss			X	
###	Maintenance Agreement #		X		
###	Maintenance Agreement Expiration Date		X		
###	*Manufacturer	X	X	X	only req. for property mgmt.
###	*Model (name or number assigned by the manufacturer)	X	X	X	only req. for property mgmt.
###	*Move or Transfer	X	X	X	
###	*OAKS Account ID	X	X	X	
###	*Off Inventory				
###	*Original cost	X		X	
###	*Person Assigned To	X		X	
	Product Version		X	X	
	Profile ID		X	X	X
###	*Program – 7100B	X		X	
	Program Code	X	X	X	X
	Quantity	X	X	X	X
###	*Purchase Order#	X	X	X	

Ohio EPA Asset Management Required Data Elements w/suppl. information for use in AM System Build
as of May 13, 2012

	Room #			X	
	Retirement Transaction Date	X			
###	*Salvage (retired in OAKS)	X		X	
###	*Serial Number	X	X	X	only req. for property mgmt.
###	*Surplus (same as salvage)				
	Tag Number	X	X	X	X
	Total Cost	X	X	X	
	Transaction Date	X		X	X
	Transaction Type (e.g. addition, retirement)	X			
###	Vendor (*PO ID – provides vendor info)	X	X		

Note: Yellow highlighted rows are those that require population in OAKS in order for a new asset to be accepted into OAKS.



Project Charter

PROJECT TITLE AND DESCRIPTION: (What is the project?)

Title: Asset Management Software Analysis

1. To use Gartner and other resources to research and analyze several software tools and make recommendations to Ohio EPA for those ideal in meeting a majority of the Ohio EPA's Asset Management requirements.
2. To provide a document of minimum requirements needed for inclusion in an agency Policy and Procedure in order to meet state requirements for asset management.

PROJECT MANAGER ASSIGNED AND LEVEL OF AUTHORITY: (Who is given authority to lead the project and define the authority levels with the project's budget, schedule, staffing, etc.)

Adele Vogelgesang

Acceptance Criteria: (What numerical criteria will be used to measure project success?)

Completion and delivery of Project Planning documents by May 22, 2012 to both the DAS sponsor Nelson Gonzalez and to the Ohio EPA AM team sponsors. There will be the Project Management course set of documents and the Ohio EPA set of documents which include: charter, scope, Requirements, Work Breakdown Structure, Project Schedule, Risks, Costs, Communications Plan, Human Resource Plan, Quality Plan, and Lessons Learned.

BUSINESS CASE: (Why is the project being done?)

This project is being done to fulfill requirements for completion of the Project Management course hosted by Department of Administrative Services. This project was specifically selected based on its applicability to all state agencies to provide helpful information that can be benchmarked from by other state agencies in putting in place their own AM systems and processes.

BUSINESS CASE: (Why is the project being done?)

Not only is there a State of Ohio Policy and Procedure on Asset Management last updated Dec 2011 that all state agencies need to get into compliance with, but this AM policy is the result of law and administrative code requirements: ORC 125.16 and DAS Directive no. 06-27.

Where some tracking of state property including IT assets is taking place, the system and processes need a major realignment in order to meet state requirements. This Asset Management project will provide the information helpful to select the most appropriate software solution and provide information required for the agency policy and procedure and for business process changes that will better support asset management throughout the supply and administration channels.

PROJECT COST ANALYSIS: (What is the expected or estimated cost of the project?)

Use of a blended rate of \$40.00 per person.

54 hours X 7 people in class time +

20 hours per 7 team members outside of class time during the period April 3 – May 15, 2012.

Requirements meeting with Ohio EPA conducted on April 13, 2012 with 8 Ohio EPA SMEs and 5 project team members attending from 2-4 p.m.

1 hour per 12 SME to gather more info post the meeting

Following is the calculated cost for producing the work products listed in this document:

54 hours X \$40.00 = \$2,160 X 7 = \$15,120

20 hours X \$40.00=\$800 X 7 = \$5,600

2 hours X \$40.00=\$80 X 12=\$960

1 hour X \$40.00=\$40 X 12 = \$480

Total estimated cost: **\$22,160**

PRODUCT DESCRIPTION / DELIVERABLES: (What will be the end result of the project and what are the specific deliverables of the project?)

All planning documents for both the PM course team and the Ohio EPA team to cover the following deliverables:

1. Analysis of at least one scanning-related software tool that could be used to track bar code related information that could be automatically uploaded into OAKS or other mid-tier software with analysis and findings documented by May 8, 2012 and delivered by May 22, 2012.
2. Analysis of the OAKS interface ability with the IT Asset management component of ZEN 11/Zenworks tool with findings documented by May 8, 2012 and delivered by May 22, 2012.
3. Analysis of at least 1 Gartner magic quadrant-related AM software tool that would fill EPA AM requirements and providing this information to the EPA by May 22, 2012.
4. Review of all data elements identified via the preliminary project to gather requirements to ensure all critical Fiscal, Property Management, and IT fields have been included for the future

Asset Management system to be built. Critical fields will be determined via consult with SMEs for each area above. Labeling of all Fiscal fields, facilities/property management fields, and IT-related fields for easy identification of data type owners within the agency by May 8, 2012. Document provided to Ohio EPA by May 22, 2012.

5. Identification and listing of all minimum requirements for Ohio EPA and all state agencies to include in their agency-specific Policy and Procedure for Asset Management based on the State of Ohio Asset Management Policy and Procedure updated in Dec 2011.

Risks and/or Assumptions: (Any identified risk or assumptions that could potentially affect the project)

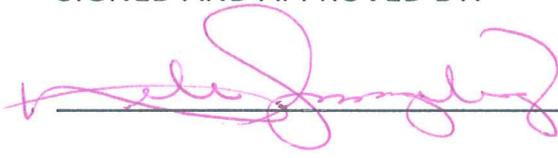
Absence of team members during any meeting will impede project progress.

Inability of any team member to complete his or her assignment or make sufficient progress throughout the project period will affect other project deliverables given dependencies and the fact that many of the project deliverables must be done in parallel due to the short project period of April 4 – May 15, 2012 with final presentation and submission of project materials due on May 22, 2012.

Absence of SharePoint as a project site to share documents and facilitate communication will inhibit project progress. Wiggo.com is a free site similar to SharePoint and will be used given late availability of SP site.

Unavailability of project sponsor to provide mentoring throughout project will lessen quality of deliverables.

SIGNED AND APPROVED BY:



4-17-12

Nelson Gonzalez, Project Sponsor/Project Mgmt. Course Trainer

[DAS_AM_2012]

Requirements and Business Rules

Ohio

Environmental
Protection Agency

Revision History

Version	Date	Modified By	Description
1.0	4/23/2012	Adele Vogelgesang	Inserted all DAS AM deliverables/requirements into the Requirements template for sign off by EPA AM project manager /IT business unit, as authorization for completing a smaller number of the EPA AM set of requirements/scope due to short DAS project mgmt. course time frame.

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Overview

The DAS AM Project Team will provide a listing of categorized Data Elements for the three business areas of interest that include IT, Fiscal, and property management. The DAS AM project team will also provide an analysis of at least one bar code software that will work with the OAKS system and an analysis of the ZEN 11 IT asset component that is required to be used in the Ohio EPA Asset Management system. Our team will also provide a document showing the minimum requirements to be included in the Ohio EPA Asset Management Policy and Procedure based on Ohio Revised Code and Administrative Code and the higher level State Policy and Procedure. It was recognized early in our project analysis of the Ohio EPA AM project that there are many more requirements for the Ohio EPA AM project that need to be included in the Ohio EPA AM system than our team does not have the time during our shorter project period to explore, analyze, and document.

User Requirements

NOTE: These address what users need to do their jobs. These requirements are implementation independent. These define desired characteristics of the system and properties that the system must have.

ID	Requirement Description	Impacted Systems	Requirements Changed By	Change Date	Priority (Low/Medium/High)
1	Review of all data elements identified via the preliminary project to gather requirements to ensure all critical Fiscal, Property Management, and IT fields have been included for the future Asset Management system to be built. Critical fields will be determined via consult with SMEs for each area above. Labeling of all Fiscal fields, facilities/property management fields, and IT-related fields for easy identification of data type owners within the agency by May 8, 2012. Document provided to Ohio EPA by May 22, 2012.				High

ID	Requirement Description	Impacted Systems	Requirements Changed By	Change Date	Priority (Low/Medium/High)
2	Identification and listing of all minimum requirements for Ohio EPA and all state agencies to include in their agency-specific Policy and Procedure for Asset Management based on the State of Ohio Asset Management Policy and Procedure updated in Dec 2011.				High

Business/Functional Requirements

NOTE: Describe and justify the high-level business functionality that is needed.

ID	Requirement Description	Impacted Systems	Requirements Changed By	Change Date	Priority (Low/Medium/High)
1.10	Analysis of the OAKS interface ability with the IT Asset management component of ZEN 11/Zen works tool with findings documented by May 8, 2012 and delivered by May 22, 2012.				High
2.10	Analysis of at least one scanning-related software tool that could be used to track bar code related information that could be automatically uploaded into OAKS or other mid-tier software with analysis and findings documented by May 8, 2012 and delivered by May 22, 2012.				High

System/ Non-Functional Requirements

NOTE: These requirements specify a condition or capability that must be met or possessed by a system or its component(s). Non-functional requirements are developed to directly or indirectly satisfy user requirements.

Please document N/A (Not Applicable) if a specific section (below) is not required for the project. Do not delete sections.

The DAS AM project team will not be able to provide this level of detail for the Ohio EPA AM project. None of the following areas are to be supported by the DAS AM team. Only the USER and Business/Functional requirements above are to be completed by our project team.

PORTABILITY REQUIREMENTS

Portability requirement ensure that the application or component can be easily and quickly ported to specified new environments if and when necessary. They ensure that applications are developed in a way to minimize porting costs and schedules. Portability requirements are typically specified in terms of the maximum amount of effort permitted for average engineers to port the application or component to the specified environment.

Examples –

1. *Porting the application from Windows NT to Windows XP shall not require modifying more than 1.5% of the modules.*
2. *The average time needed to port the application from Internet Explorer to Netscape Navigator shall not exceed 6 person weeks.*

ID	Requirement Description	Impacted Systems	Requirements Changed By	Change Date	Priority (Low/Medium/High)
1.500					

USABILITY REQUIREMENTS

A usability requirement specifies how easy the system must be to use. Usability is a non-functional requirement, because in its essence it doesn't specify parts of the system functionality, only how that functionality is to be perceived by the user, for instance how easy it must be to learn and how efficient it must be for carrying out user tasks.

Example–

1. *When the user logs in to the email account, the user should be able to differentiate between new, read, and unread messages.*

ID	Requirement Description	Impacted Systems	Requirements Changed By	Change Date	Priority (Low/Medium/High)
1.600					

RELIABILITY REQUIREMENTS

Reliability requirement describes the success rate of actions in the software.

Example –

The system shall properly turn on the light 99/100 times.

ID	Requirement Description	Impacted Systems	Requirements Changed By	Change Date	Priority (Low/Medium/High)
1.700					

EFFICIENCY REQUIREMENTS

Efficiency is especially important for applications in high execution speed environments where performance and scalability (increase in the system's workload that the system should be able to process) are paramount. Efficiency requirements ensure that these parameters and boundary conditions are documented.

Examples–

1. *Ensure that Memory, network, and disk space allocation is completed per the specifications in the Software installation guide.*
2. *Ensure compliance with Object-Oriented and Structured Programming best practices*
3. *Ensure compliance with SQL programming best practices*

ID	Requirement Description	Impacted Systems	Requirements Changed By	Change Date	Priority (Low/Medium/High)
1.800					

DELIVERY/DEPLOYMENT REQUIREMENTS

Software delivery/deployment is all of the activities that make a software system available for use. The general delivery/deployment process consists of several interrelated activities with possible transitions between them. These activities can occur at the producer site or at the consumer site or both.

These requirements include details regarding release, installation, updates, version control, special needs, and uninstall.

Example –

1. *Ensure that all prior versions of the application and database are backed up to tape prior to the installation of version 2.0 of XXX.*

ID	Requirement Description	Impacted Systems	Requirements Changed By	Change Date	Priority (Low/Medium/High)
1.900					

IMPLEMENTATION REQUIREMENTS

These are special set of conditions or capabilities that are needed only during system rollout or implementation.

Example –

1. *All external firewalls must be enabled during the initial deployment of the software to the server to prevent un-authorized intrusion during the implementation.*

ID	Requirement Description	Impacted Systems	Requirements Changed By	Change Date	Priority (Low/Medium/High)
1.1000					

STANDARDS REQUIREMENTS

These requirements define the standards and protocols that should be adhered to during the design, development and implementation processes.

Example –

1. *All development should comply with "Open Standard Development".*
2. *An "Open Standard" must not prohibit conforming implementations in open source software.*
3. *Implementation of the standard MUST NOT require any other technology that fails to meet the criteria of this Requirement*

ID	Requirement Description	Impacted Systems	Requirements Changed By	Change Date	Priority (Low/Medium/High)

ID	Requirement Description	Impacted Systems	Requirements Changed By	Change Date	Priority (Low/Medium/High)
1.1100					

SYSTEM OR SPACE REQUIREMENTS

To be used efficiently, all computer software needs certain hardware components or other software resources to be present on a computer. These pre-requisites are known as (computer) system or space requirements and are often used as a guideline as opposed to an absolute rule. Most software defines two sets of system requirements - minimum and recommended.

Example –

1. *Prior to installing XXX software, ensure that the following space or system requirements have been met –*

- *3D Hardware Accelerator - 64MB of memory minimum*
- *Windows 2000/XP*
- *Pentium 4 1.5 GHz or Athlon XP 1500+ processor or higher*
- *384 MB RAM*
- *8x Speed CD-ROM*
- *2.2 GB free hard disk space*
- *DirectX 9.0b compatible 16-bit sound card*
- *DirectX 9.0b*

ID	Requirement Description	Impacted Systems	Requirements Changed By	Change Date	Priority (Low/Medium/High)
1.1200					

PERFORMANCE REQUIREMENTS

These requirements define performance related characteristics of the product that must be met in order for the product to be released. Performance requirements are mandated via legal contract or service level agreement

Example –

2. *95% of all response time should be less than 8.5 second*

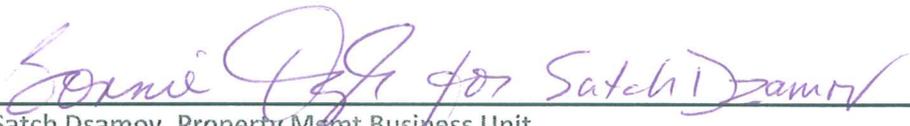
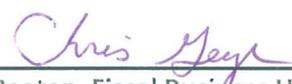
ID	Requirement Description	Impacted Systems	Requirements Changed By	Change Date	Priority (Low/Medium/High)

ID	Requirement Description	Impacted Systems	Requirements Changed By	Change Date	Priority (Low/Medium/High)
1.1300					

Signatures

Required Signatures of Approval – Business Unit

- ✓ *I agree that this document, together with its appendices, represents our best understanding of the requirements for this release today and that the system described will satisfy our needs as we currently understand them.*
- ✓ *I agree to make future changes in this baseline through the project's defined Requirements Change Management process.*
- ✓ *I realize that approved changes might require us to modify the cost, resource, and schedule commitments of this project.*

 _____ Satchi Dsamov, Property Mgmt Business Unit	4-23-12 _____ Date
 _____ James Beaton, Fiscal Business Unit	4-23-12 _____ Date

Required Signatures of Approval – ITS

- ✓ *I agree that this document contains adequate information for the development of deliverables including design and test documentation.*
- ✓ *I agree that this document contains the appropriate level of detail to begin detail design and develop the required Software Quality Assurance documents.*


Skip Holler, IT resource


Date

Use of this tool

A Preliminary Scope Statement should be developed during the Initiation phase of a project and then finalized during the planning phase. The purpose is to document key objectives of the project or product, the project boundaries in terms of what will be done and not done in the project, high level deliverables and milestones. In addition, assumptions and constraints, alternate options and the acceptance criteria for verifying the project objectives have been met, should all be identified. The project manager and the project team will use this document as a point of reference for potential changes, added work, and any project decisions.

PROJECT IDENTIFICATION		
Project Name	Project Sponsor	Agency Name
Asset Management Software Analysis	Nelson Gonzalez	DAS
Project Number (Finance Code – Optional)	Project Manager	Date Created
	Adele Vogelgesang	4/17/12

PROJECT / PRODUCT OBJECTIVES

The project and product objectives are statements describing the tangible deliverables of the project and what they are expected to achieve. The objectives should be concisely written so they can be evaluated after the completion of the project to see whether they were achieved and to the extent they were achieved. The objectives should be **SMART: Specific, Measurable, Attainable, Realistic and Time specific.**

The project objective is to use Gartner and other resources to research and analyze several software tools and make recommendations to Ohio EPA for those ideal in meeting a majority of the Ohio EPA's Asset Management requirements. To provide a document of minimum requirements needed for inclusion in an agency Policy and Procedure in order to meet state requirements for asset management.

Conditions of satisfaction include:

All planning documents for both the PM course team and the Ohio EPA team to cover the following deliverables:

1. Analysis of one to two asset management related software tools that could be used to track bar code related information that could be automatically uploaded into OAKS or other mid-tier software with analysis and findings documented by May 8, 2012 and delivered by May 22, 2012.
2. Review of all data elements identified via the preliminary project to gather requirements to ensure all critical Fiscal, Property Management, and IT fields have been included for the future Asset Management system to be built. Critical fields will be determined via consult with SMEs for each area above. Labeling of all Fiscal fields, facilities/property management fields, and IT-related fields for easy identification of data type owners within the agency by May 8, 2012. Document provided to Ohio EPA by May 22, 2012.
3. Identification and listing of all minimum requirements for Ohio EPA and all state agencies to include in their agency-specific Policy and Procedure for Asset Management based on the State of Ohio Asset Management Policy and Procedure updated in Dec 2011.

PROJECT DESCRIPTION / DELIVERABLES – IN SCOPE

What work needs to be completed during the project. What will be delivered at the end of the project? List the specific outputs that will be delivered by the project team at the end of the project. A deliverable is any outcome that must be produced to complete the project or part of a project. List as many as needed with the most important starting first on the top left. The deliverables listed are the top level of the work breakdown structure and may be expanded and further refined during the Planning Process and documented in the Project Plan.

Complete documents for tools analysis:

- Requirements

Complete Project management documents for class requirements:

- Scope of Work
- Work Breakdown Structure
- Schedule
- Cost Estimate
- Risk Analysis
- Quality Plan
- Human Resource Plan
- Communications Plan
- Project Management Plan Document
- Lessons Learned
- Close Project Plan

Group Presentation

PROJECT FEATURES AND FUNCTIONS

Describe the parameters of the product or service. Describe how the product or service is to be delivered, once the project has completed. This section permits you to be more specific with the expectations of the product or service.

- Tools analysis document provided electronically and in hard copy via presentation
- To provide a document of minimum requirements electronically hard copy via presentation needed for inclusion in an agency Policy and Procedure in order to meet state requirements for asset management
- Provide complete project planning documents for EPA
- Provide project management documentation to sponsor.
- Review of all data elements identified via the preliminary project to gather requirements to ensure all critical Fiscal, Property Management, and IT fields have been included for the future Asset Management system to be built. Critical fields will be determined via consult with SMEs for each area above. Labeling of all Fiscal fields, facilities/property management fields, and IT-related fields for easy identification of data type owners within the agency.

OUT OF SCOPE - OBJECTIVES

Excluded objectives (the benefits which someone might expect, but will not be realized as a result of the project). Be sure to only list excluded objectives that one can reasonably expect to be included by project sponsors or other interested parties. Since the Scope Statement focuses on what efforts are within the boundaries of the project, clearly identify work that may be necessary but not within the bounds of the effort by this project team.

- Executing the EPA project
- EPA Project Schedule
- Analysis of more than two asset management software tools.
- Analysis of Zen 11, OAKS/PeopleSoft
- All project documents past the planning stage

INITIAL PROJECT ORGANIZATION

List the resources that will initially work to define the project.

Senior Management:

Nelson Gonzalez- Sponsor

Team Members:

- Adele Vogelgesang- Project Manager
- Zaheer Moin Udin – Project Lead
- Brian Panke
- Alan Kidder
- Brian Smith
- Becky McKinney
- Jamie McClary

WORK BREAKDOWN STRUCTURE

At a minimum, provide the initial, high-level project milestones, deliverables and work packages. Insert initial schedule or link to the WBS if one has been created.

Complete documents for tools analysis:

- Requirements 4/24

Complete Project management documents:

- Charter 4/17
- Scope of Work 4/17
- Work Breakdown Structure 4/24
- Schedule 5/1
- Cost Estimate 4/17
- Risk Analysis 4/24
- Quality Plan 4/24
- Human Resource Plan 4/10
- Communications Plan 4/10
- Lessons Learned 5/8
- Close Project Plan 5/15
- Project Management Plan Document 5/15

Group Presentation 5/15

INITIAL DEFINED RISKS

In bullet form, list the initial defined risks.

- Absence of team members during any meeting will impede project progress.
- Inability of any team member to complete his or her assignment
- Absence of web based communication tools
- Unavailability of project sponsor to provide mentoring throughout project will lessen quality of deliverables.

BUDGET

Provide an estimate of the project cost, including the estimate range (e.g., +/- 50%).

Use of a blended rate of \$40.00 per person.

54 hours X 7 people in class time +

20 hours per 7 team members outside of class time during the period April 3 – May 15, 2012.

Requirements meeting with Ohio EPA conducted on April 13, 2012 with 8 Ohio EPA SMEs and 5 project team members attending from 2-4 p.m.

1 hour per 7 SME to gather more info post the meeting

Following is the calculated cost for producing the work products listed in this document:

54 hours X \$40.00 = \$2,160 X 7 = \$15,120

20 hours X \$40.00=\$800 X 7 = \$5,600

2 hours X \$40.00=\$80 X 7=\$560

1 hour X \$40.00=\$40 X 7 = \$280

Total estimated cost: **\$21,560**

ASSUMPTIONS / CONSTRAINTS

List in bullet format the known assumptions and constraints that have the potential to impact the project. List any assumptions/constraints that have been made in recommendations for the purpose of project planning. Assumptions are items the project team believes to be true as a basis for their project execution. Assumptions may have to do with resource availability, consistency of support from another area and other factors.

Constraints are typically given to a team. The team has limited ability to change the constraint.

Assumptions:

- Off the shelf tool that will meet EPA's needs.
- EPA systems will have interfacing capabilities.
- Zen 11 will meet IT AM needs of EPA

Constraints:

- Face to face meetings on Tuesday's only
- Research is limited to internet research. Limited time to talk with vendors.
- Limited access to EPA staff, sponsors, SME's.

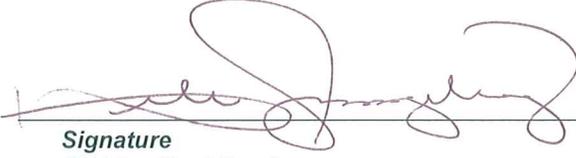
ACCEPTANCE CRITERIA

Describe how the project/product will be reviewed to verify the project objectives have been achieved. Include interim reviews, quality assurance activities, and which organization(s) have final approval authority.

- Presentation given May 22 to meet class requirements
- Completion and submission of project management documentation by May 15
- Weekly reporting of milestones to sponsor

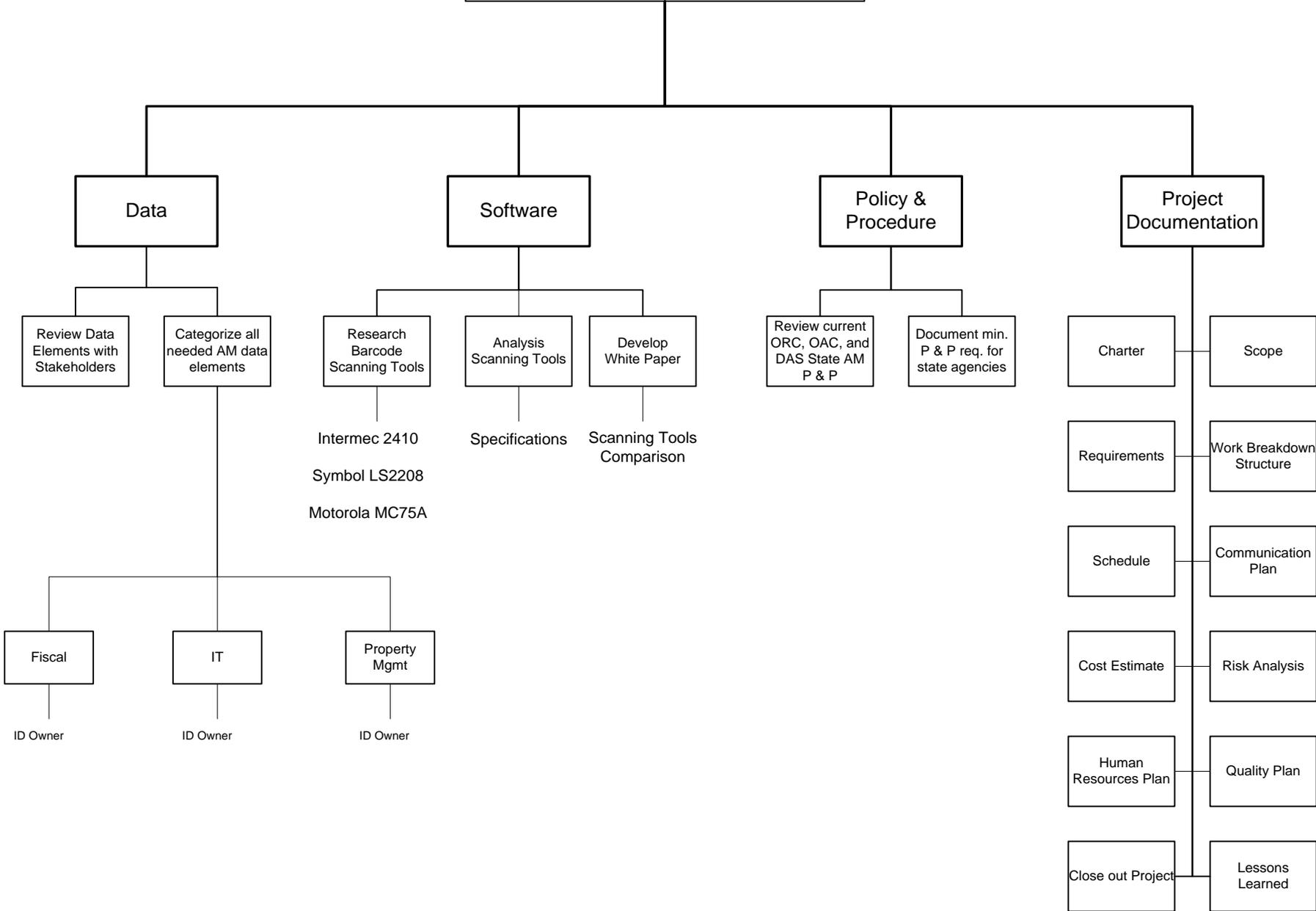
APPROVAL

Name	Title	Approved Y/N	Date Approved
Nelson Gonzalez	Sponsor	Y	4/17/2012



Signature
(If Using Hard Copy)

**Project
Work Breakdown Structure
Asset Management (AM)**





Environmental
Protection Agency

Asset Management

Project Management Team

Asset Management Team

Project Manager:

Adele Vogelgesang, EPA

Project Lead:

Zaheer Moin Uddin, BWC

Team Members:

- Alan Kidder, JFS
- Becky McKinney, EPA
- Brian Panke, JFS
- Brian Smith, JFS
- Jamie McClary, Education

Development is often managed, while organizational **assets** are often neglected. This results in asset loss or their inappropriate use.

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Project Management Class



Project Charter

Process of developing a document that formally **AUTHORIZES** a project and documents initial **REQUIREMENTS**.

Project Charter

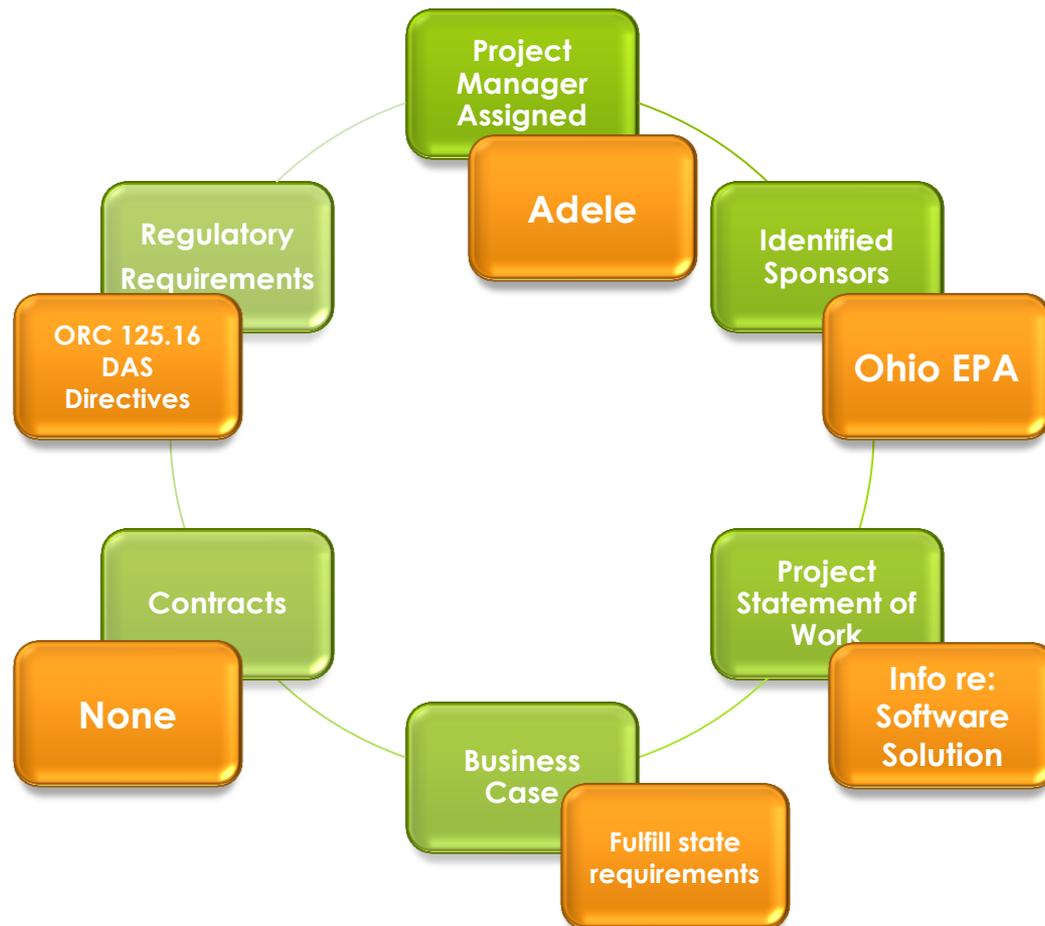
INPUTS

Statement of Work
Business Case
Description
Cost Estimate
Contract

OUTPUTS

Project
Charter

AM Project Charter Essentials



AM Project Charter Essentials

- **Tools and Techniques**
- **Initial Identified Deliverables**
- **Analysis of at least one scanning software tool**
- **Review of all critical data elements**
- **Minimum requirements for policy and procedure**

AM Project Charter Essentials

- **Identification and listing of minimum requirements** for Ohio EPA and all state agencies to include in their agency-specific Policies and Procedures for Asset Management for compliance with ORC 125.16 and DAS Directive 06-27.
- **High Level Risks and/or Assumptions** –
 - Absence of team members during any scheduled meeting
 - Inability of any team members to complete their work assignments each week.
 - Unavailability of project sponsor to provide mentoring throughout the project.
- **Project Milestones** – Completion and delivery of all AM Project Planning documents by May 22, 2012 to the DAS and Ohio EPA AM team sponsors.

Project Scope

Developing a detailed
description
of the **project** and **product**

DESCRIPTION OF WORK

- FEATURES
- FUNCTIONS
- WORK PACKAGES



Collect
Requirements



Define &
Verify Scope



Create WBS

Project Scope

INPUTS

Project Charter
Requirements
Document
Historical
Information

OUTPUTS

Project Scope
Statement

Project
Document
Updates

Project Scope - Deliverables

- Analysis of one to two asset management related software tools
- Review of all data elements identified to ensure all critical fields are met.
- Identification and listing of all minimum requirements based on State of Ohio Asset Management Policy and Procedure updated in December 2011.

Project Scope – Out of Scope

- Executing the EPA project
- Analysis of EPA Existing Software
- EPA Project Schedule
- All project documents past the planning stage

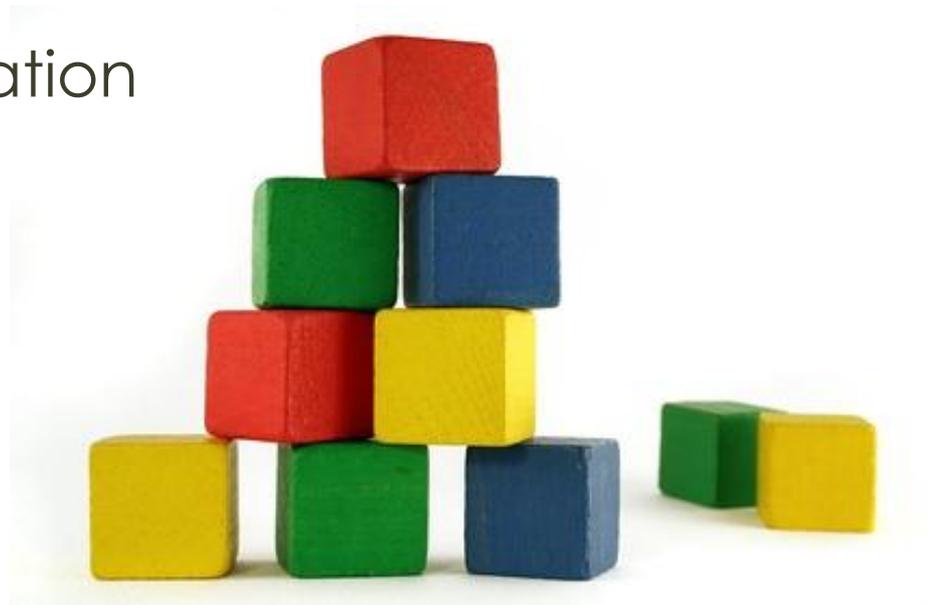
Project Foundation



**Collect
Requirements**

Project Foundation

- Solid Requirements
- Clear Communication





How the customer explained it



How the Project Leader understood it



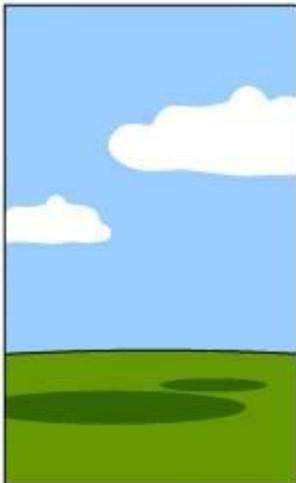
How the Analyst designed it



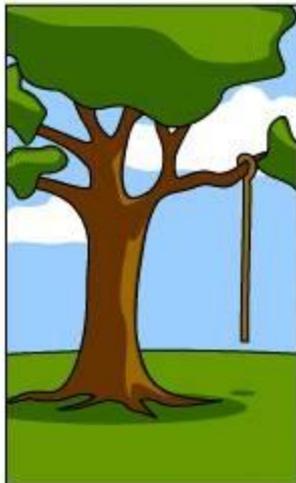
How the Programmer wrote it



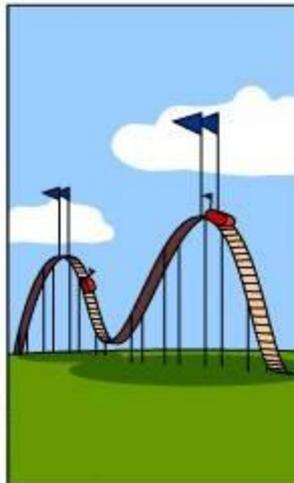
How the Business Consultant described it



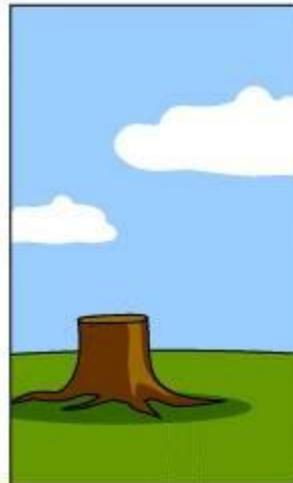
How the project was documented



What operations installed



How the customer was billed



How it was supported



What the customer really needed

What the customer needs



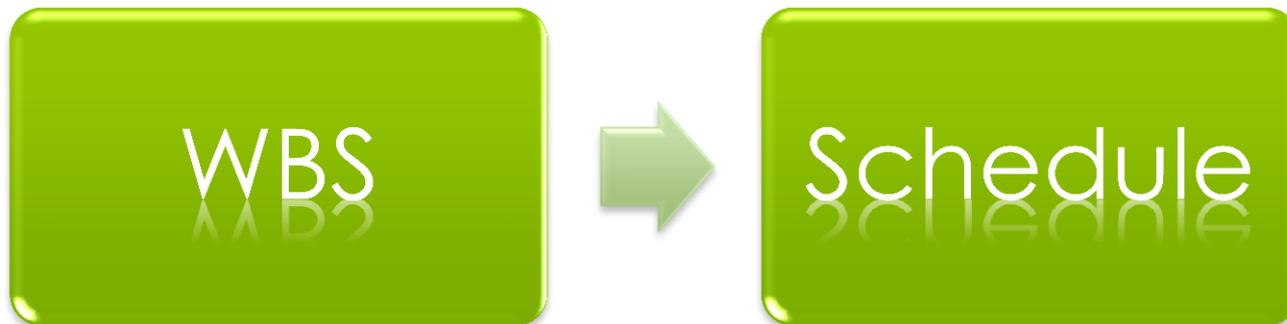
How the customer explained it



What the customer really needed

Time Management

- Define and sequence activities
- Estimate activity resources and durations
- Develop schedule
- Control schedule

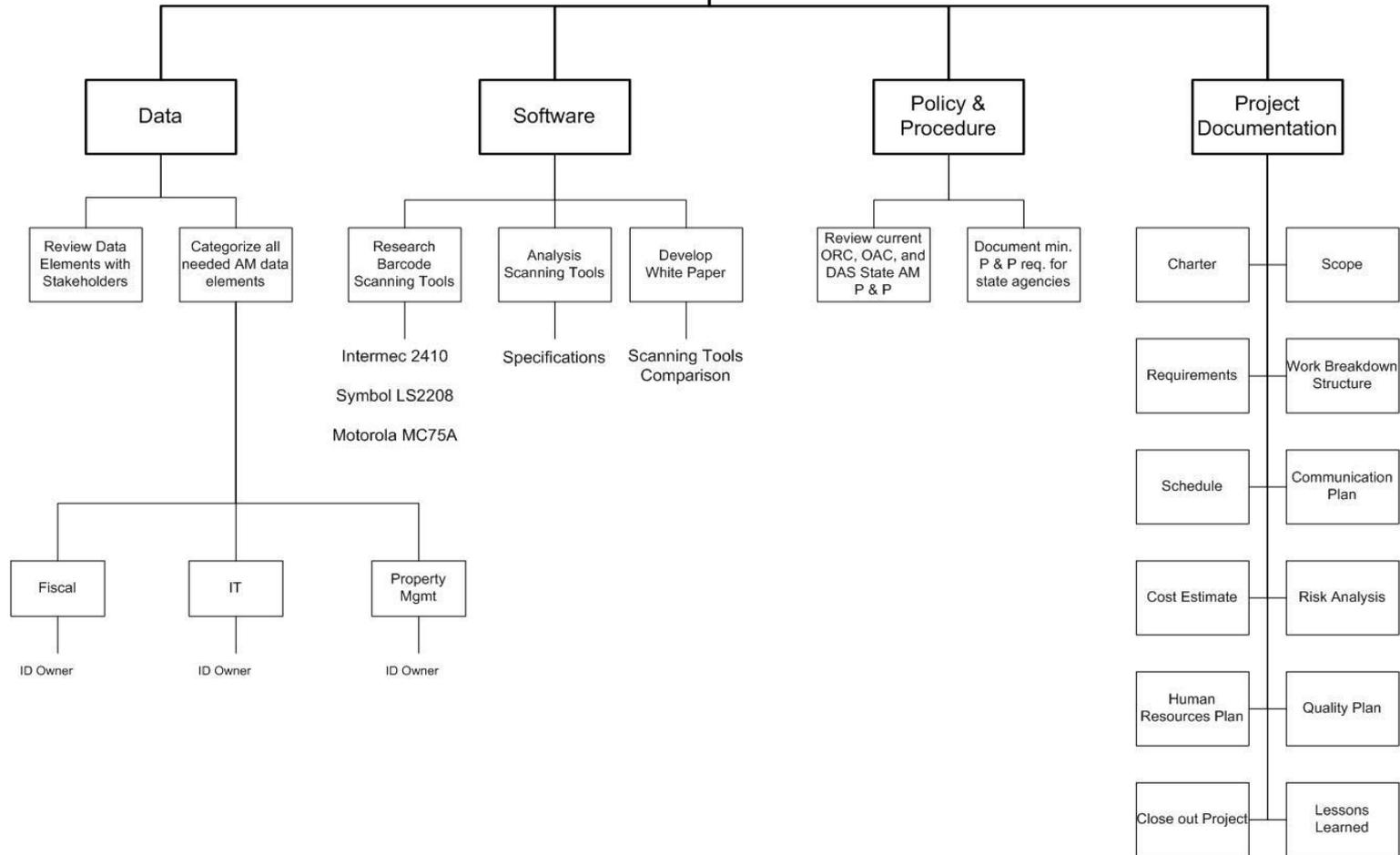


Work Breakdown Structure

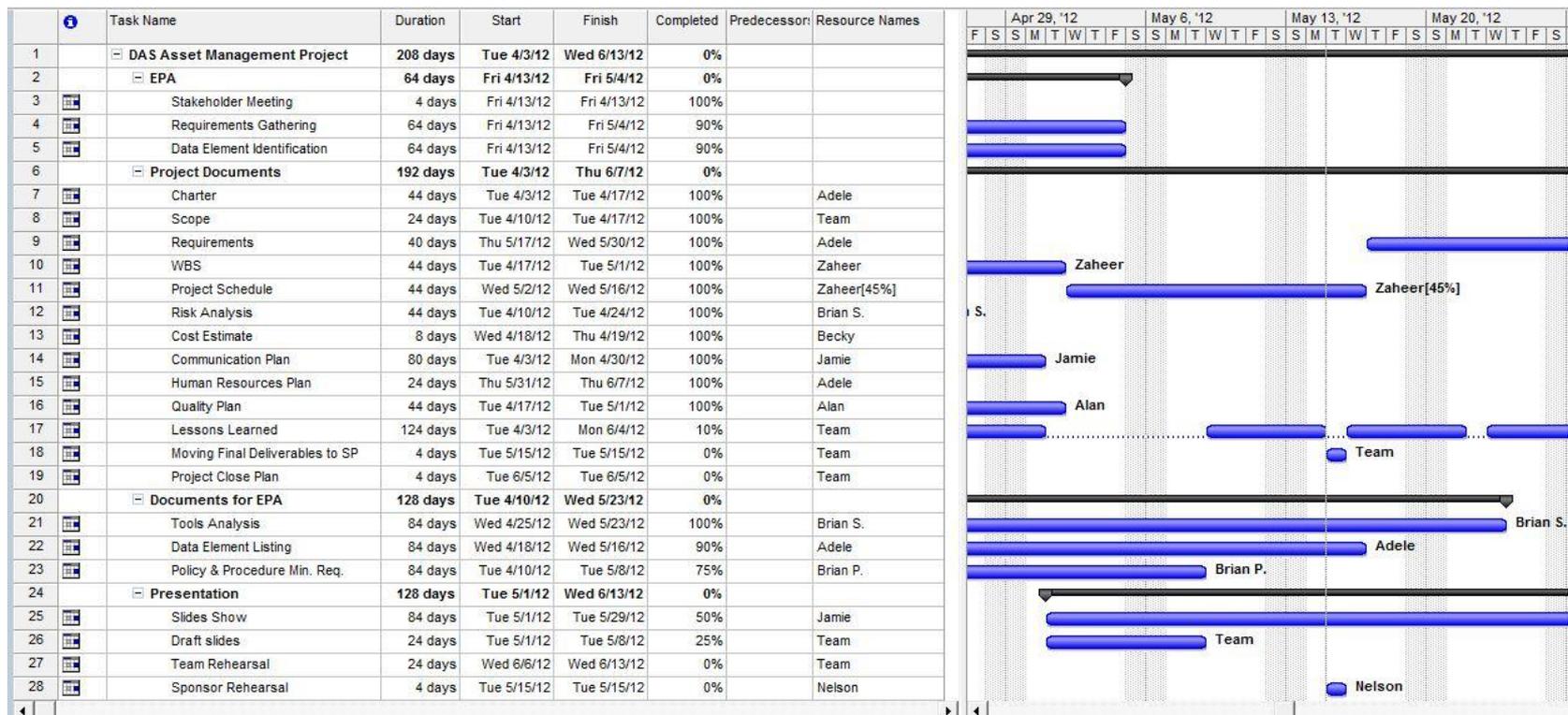
(WBS)

WBS is a deliverable-oriented hierarchy that **defines** and **organizes** the work of the project.

Project Work Breakdown Structure Asset Management (AM)



Schedule



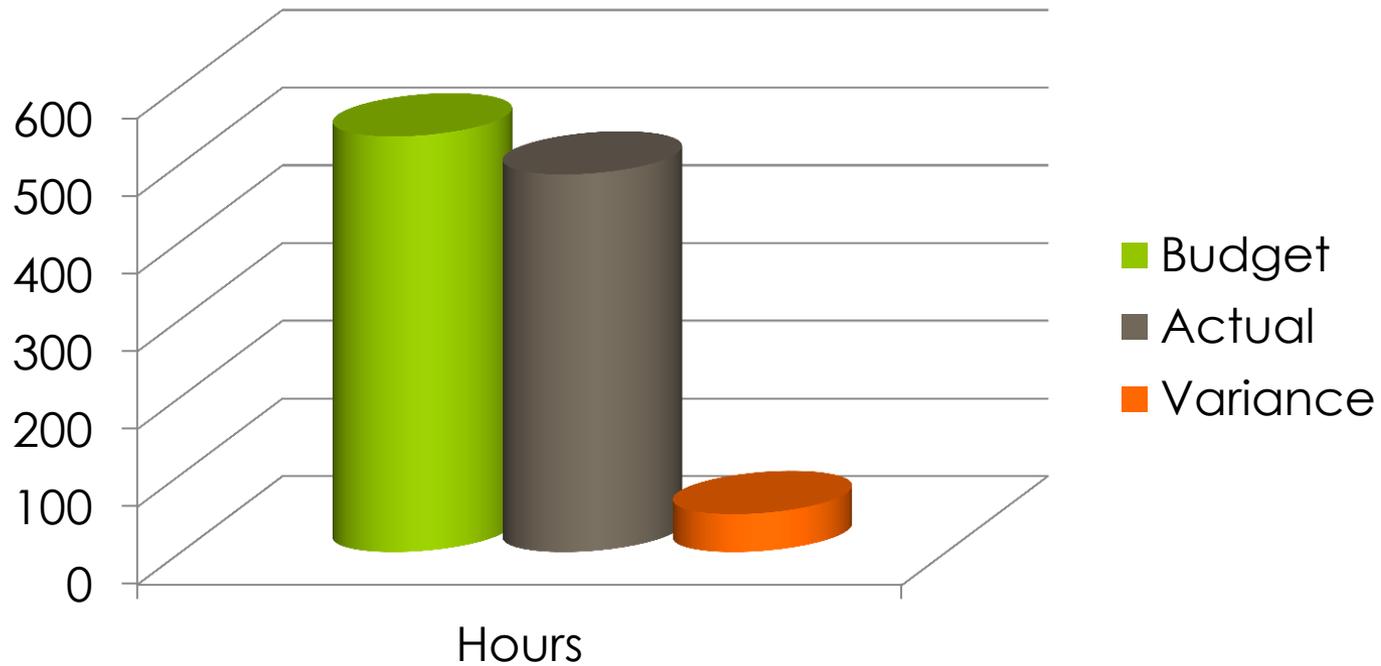
Cost Management

The processes involved in **estimating**, **budgeting** and **controlling** cost, so the project can be completed within the approved budget.

Cost Management

Phase	Activity
Planning	Estimate Costs – Evaluate the activity time and resources needed to determine the activity cost.
Planning	Determine Budget – Aggregating estimated cost to establish the cost baseline
Executing/Controlling	Control Costs – Update the budget; manage changes to the cost baseline.

Cost Management



Cost Management

Initial Estimated Budget

Labor – 535 hours x \$40/hour

\$21,400

Actual Budget Cost

Labor – 486 hours x \$40/hour

\$19,440

Actual Cost Variance

Labor – 49 hours x \$40 hour

\$1,960

Project Quality Management Plan

- **AM Project Acceptable Quality Standards**
- **PMBOK** – Project Management Book of Knowledge- Project standards established by the Project Management Institute.
- **AM Project Team** – will refer to established PMBOK standards when developing processes for quality standards, quality control and quality assurance.
- **AM Project Team** – will work closely with project sponsors and stakeholders to define the organizations' and stakeholders standards for quality.
- **AM Project Team** – will incorporate PMBOK, stakeholder and organization standards for quality into all project quality processes throughout the project.

Human Resource Management

- Involves the processes that organize, manage, and lead the project team
- Project team is comprised of people with assigned roles and responsibilities for completing the project
- Processes are: develop HR plan; acquire, develop and manage the project team

Communications Management

Processes required to ensure **timely** and **appropriate**



of project **information**

Communications Plan

Majority of time in Project Management spent **communicating** with team members.

- Identify Stakeholders
- Plan Communications
- Distribute Information
- Manage Stakeholder Expectations
- Report Performance



Project Risk Management

- The processes of conducting risk management are:
 - Planning
 - Identification
 - Analysis
 - Response planning
 - Monitoring and control
- The objectives are to increase the probability and impact of positive events and decrease the probability and impact of negative events

Project Risk Management

Below is an example of the team's log:

Project Risk Log

Project Team Members: Alan Kidder, Jamie McClary, Becky McKinney, Adele Vogelgesang, Brian Panke, Saheer Moin, Brian Smith Udin,

Use of this tool: The Risk log details the identified risk within the project, the risks associated with the constraints and project assumptions, and how the project team will monitor, react to, or avoid the identified risks. Risks are uncertain events or conditions that could occur and if the occur may have a positive or negative affect on a project's objectives. All risks will be listed on the Risk Log, and risks with a level of 12 or above should receive special attention. Have caution not to list all business risks, just list the risks related to the current project.

<Hover by the red triangle in the top right corner of the cell, for more details. Use the Instructions on the next tab .>

Date Identified	Risk ID.	Risk Description	Category	Potential Impact	Risk Owner	Probability of Occurrence (1-5)	Impact of Risk (1-5)	Risk Level (1-25)	Response Type	Risk Response Plan	Status
04/10/12	1	The scope of the project is somewhat defined and subject to change	Project Management	Can cause the project to increase in time and lose productivity	Team	3	4	12	Mitigation	Focus on firming up scope in planning process	New
04/10/12	2	The business requirements of the requirements are mostly understood and straight forward	Project Management	Can cause the project to increase in time and lose productivity	Team	2	3	6	Mitigation	Focus on firming up BRs in planning process	New
04/10/12	3	The project has firm implementation dates	Project Management	"Go-Live" date	Team	3	2	6	Acceptance	Program work schedule to ensure dates are met	New
04/10/12	4	Project duration is estimated at 4 months	Project Management	"Go-Live" date	Team	3	2	6	Acceptance	Program work schedule to ensure dates are met	New
04/10/12	5	The Project Manager's experience and training is recent and has success in managing projects similar to this one	Project Management	"Go-Live" date	Team	2	2	4	Acceptance	Ensure the project manager is aware of the scope and details of the project	New
04/10/12	6	The project management team is dispersed at multiple sites	Project Management	Can affect communication and decrease productivity	Team	4	4	16	Mitigation	Team will be able to meet at least once a week face-to-face and Wiggio site is set up for documentation collection	New
04/10/12	7	The project participant(s) providing content knowledge on the project are somewhat inexperienced	Project Management	Can cause delays and decrease productivity	Team	4	3	12	Acceptance	Team will research key aspects of project	New
04/11/12	8	Project team can be affected by outside influences such as death of family members, sickness, etc.	Project Management	Can cause the project to increase in time and lose productivity	Team	3	2	6	Acceptance	Team has enough team members to naturally mitigate risk	New

Procurement Management

- Processes involve contracts between a buyer and a seller
- Contracts include terms and conditions
- Sometimes also known as an agreement, purchase order, or an understanding
- Involves a review and approval process to ensure that contract language describes the products, services, or results that meet the project need

EPA Asset Management The Project



Current



Desired



Product Background

- Project
- Scope
- Deliverables



Product Analysis

Barcode scanning tools

Methodology

- Delphi technique
- Vendor information
- Research by consulting groups
- Product comparison tool



Product Analysis

Barcode scanning tools



Intermec 2410



Motorola MC75A

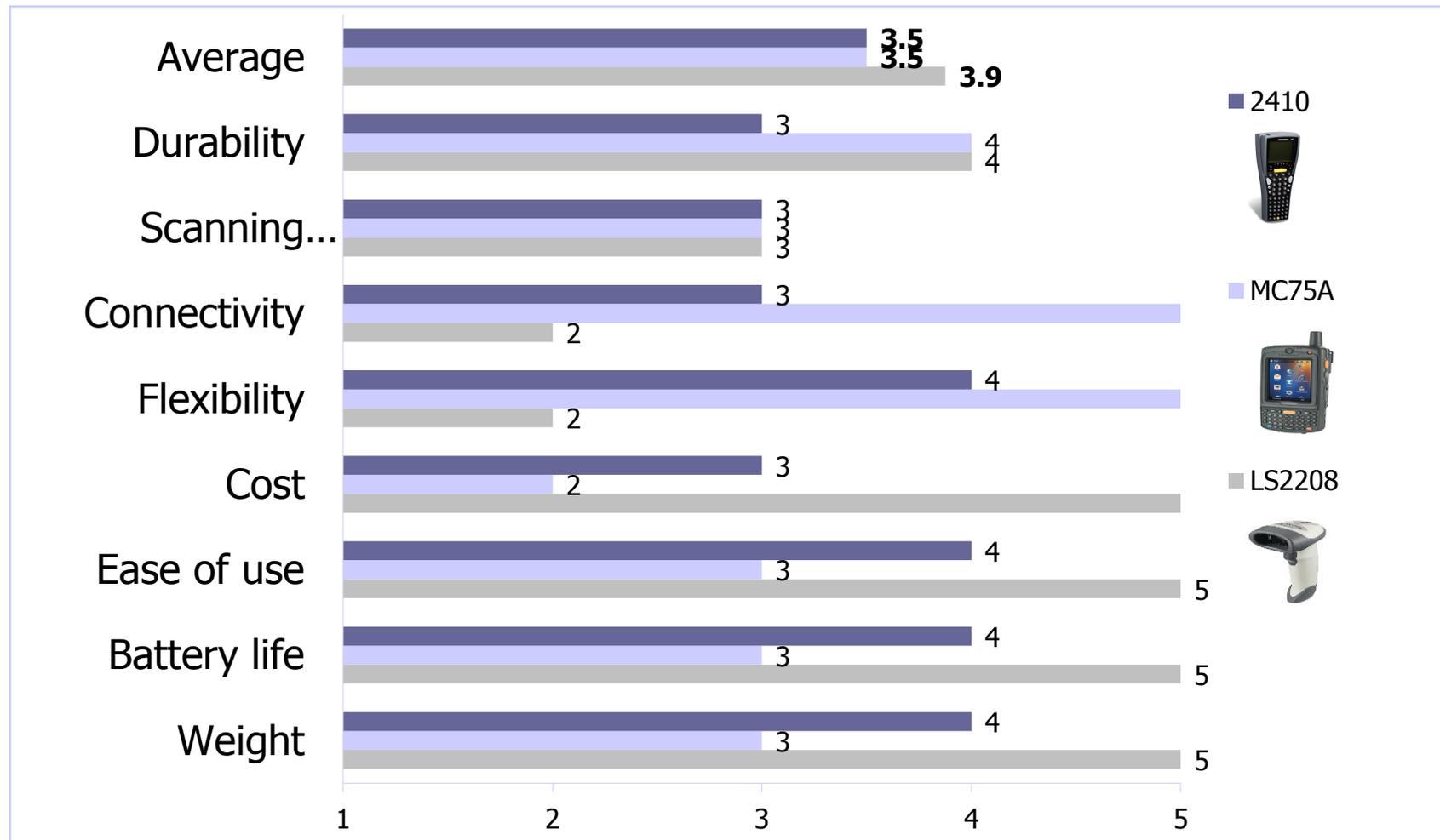


Symbol LS2208

Comparison Tool

Product Quality Feature	2410	MC75A	LS2208
Weight	4	3	5
Battery life	4	3	5
Ease of use	4	3	5
Cost	3	2	5
Flexibility	4	5	2
Connectivity	3	5	2
Scanning performance	3	3	3
Durability	3	4	4
Average	3.5	3.5	3.9

Comparison Tool



Recommendations

- ✓ Follow up with DAS
- ✓ Add weights to the features on the Product Comparison Table
- ✓ Ensure vendor support is available for the selected product
- ✓ Compatibility

EPA Asset Management Data Elements

Individual pieces of data in a database, on a report, or on a computer screen.

Individual fields in a database file such as the “item number” or “quantity” from an inventory record are examples of data elements.

Reference: www.accuracybook.com/glossary.htm

EPA Asset Management

Data Elements Deliverables

- Validate the data elements needed for each of 3 business areas
 - Data elements were:
 - Placed in a spreadsheet
 - Alphabetized
- Data elements received from Ohio EPA needed additional Subject Matter Expert (SME) input
 - Field names or labels were corrected where needed
 - Related requirements per OAKS and DAS Policy and Procedure were indicated
 - Supplemented by an AM and FIN data dictionary

Data Elements

Ohio EPA Asset Mgmt. Required Data Elements for new System as of May 13, 2012				
Data Elements or Data Fields	Fiscal	IT	Property Mgmt	DAS policy rqmt.
Accounting Date			X	
Acquisition Code	X			X
Acquisition Date	X			X
*Add			X	
*Agency ID# -EPAXXXX (Asset ID populated by OAKS)	X		X	
Agency Use - EPA (accounting code that explains funding type)	X		X	
*Appropriation Line Item (ALI)	X		X	X
*AMT1 - corresponding \$ amt. of primary funding source	X		X	
AMT(n) - corresponding \$ amt. of add'l funding sources	X		X	
Asset Category	X	X	X	X
Asset Class	X		X	X
Asset Identification	X		X	
Business Unit	X	X	X	X

EPA Asset Management

Data Elements Recommendations

- Add a column in the Data Element table for the FINS or AM Data Dictionary definitions
- Review data elements and their definitions with your team to make sure all understand the data elements in the same way
- Share this document with the entire EPA AM project team for input to allow further vetting/updates as needed prior to selection of AM system solution

Asset Management References for Minimum Requirements

ORC Section 125.16	State Property Inventory
DAS Directive GS-D-05	State Property Inventory
ORC Section 125.12-125.14	DAS' State Surplus Program
Ohio Administrative Code Rule 123:5-2-01	State Surplus Authorizing Local Disposal
Das Directive GS-D-06	Removal of Sensitive Information From State Owned Property
State of Ohio IT Standard ITS-SYS-01 for Bar Code Labels	Bar Code Standards for Automated Systems Used by State Ohio Government Agencies
DAS, General Services Division (GSD), State of Ohio Asset Management Services Policies and Procedures, December 1, 2011.	Full DAS policy and procedure http://das.ohio.gov/LinkClick.aspx?fileticket=8aAaN2DjsGE%3d&tabid=312
OBM Capital (Fixed) Asset Policies	Financial Reporting and Accounting Policies for Capital (Fixed) Assets)
ORC Section 126.21 (A)(9)	Annual Financial Reporting
ORC Section 117.17	Executive Officer Leaving Office- Letter Containing List of Inventory

Records/Reporting Requirements

- **ORC 117.17**
 - The head of a state agency leaves office

- **ORC 125.16**
 - AM Officer responsibilities
 - Certification of inventory activity by director

- **ORC 126.21(A)(9)**
 - Director's requests for the official comprehensive annual financial report of the state

Surplus/Excess Requirements

- **ORC 125.12-125.14**
 - Definitions of excess and surplus supply
 - Requirements of notification to the director
 - Allocation of proceeds by the director
- **OAC 123:5-2-01: Disposal**
 - Control of excess supplies
 - Methods of disposal
- **DAS Directive GS-D-06: Removal of Sensitive Information**

IT Standard ITS-SYS-01: Minimum Bar Code Standards

- Full asset ID to be recorded must be unique to item
- Has examples of usable alpha-numeric symbologies
- Agency name shall be included on the label
- Equipment can include wands, laser scanners and CCD scanners
- Label requirements

Governing Policy and Procedure

- OBM Capital (Fixed) Asset Policy
 - Capital Asset Requirements
 - Reporting
 - Valuation
 - Legal requirements

- DAS State of Ohio Asset Management Policy and Procedure

Questions





Environmental
Protection Agency

Asset Management

Project Management Team