



PROGRAM EXECUTIVE OFFICE FOR
SIMULATION, TRAINING & INSTRUMENTATION

Simulation as an IT Service

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Approved for Public Release.
Security and OPSEC Review Completed: No Issues.

<http://www.peostri.army.mil/CTO>

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Notes

Why would I want to deliver simulation as an IT service? That is kind of like offering a soldier as a sensor platform or a commander as an information processor. These are certainly viable functions, but they do not sound like the core purpose of the assets.



U.S. Army Military Occupational Specialties

<p>Enlisted MOS</p> <p>Infantry Branch</p> <p>11B Infantryman</p> <p>11C Indirect Fire Infantryman</p> <p>11X Infantryman (ambiguous; turns into 11B, 11C, or 11M)</p> <p>11Z Infantry Senior Sergeant</p> <p>11H Infantry Anti-Armor Specialist</p> <p>11M Mechanized Infantryman</p> <p>Field Artillery Branch</p> <p>13B Cannon Crewmember</p> <p>13C TAC Fire Operations Specialist</p> <p>13D Field Artillery Tactical Data Systems Specialist</p> <p>13E Cannon Fire Direction Specialist</p> <p>13F Fire Support Specialist</p> <p>13M Multiple Launch Rocket System Crewmember</p> <p>13P MLRS/LANCE Operations Fire Directions Specialist</p> <p>13R Field Artillery Firefinder Radar Operator</p> <p>13S Field Artillery Surveyor</p> <p>13W Field Artillery Meteorological Crewmember</p> <p>13X Field Artillery Extension Option</p> <p>13Z Field Artillery Senior Sergeant</p> <p>Air Defense Artillery Branch</p> <p>14E Patriot Fire Control Enhanced Operator/Maintainer</p> <p>14J Early Warning System Operator</p> <p>14M Man Portable Air Defense System Crewmember</p> <p>14R Bradley Linebacker Crewmember</p> <p>14S Avenger Crewmember</p> <p>14T PATRIOT Launching Station Enhanced Operator/Maintainer</p> <p>14Z Air Defense Artillery (ADA) Senior Sergeant</p> <p>Aviation Branch</p> <p>15B Aircraft Powerplant Repairer</p> <p>15D Aircraft Powertrain Repairer</p> <p>15F Aircraft Electrician</p> <p>15G Aircraft Structural Repairer</p> <p>15H Aircraft Pneumatics Repairer</p> <p>15J OH-58D Armament/Electrical/Avionics Systems Repairer</p> <p>15K Aircraft Components Repair Supervisor</p> <p>15M UH-1 Helicopter Repairer</p> <p>15N Avionics Mechanic</p> <p>15P Aviation Operations Specialist</p> <p>15Q Air Traffic Control Operator</p> <p>15R AH-64 Attack Helicopter Repairer</p> <p>15S OH-58D Helicopter Repairer</p> <p>15T UH-60 Helicopter Repairer</p> <p>15U Medium Helicopter Repairer</p> <p>15V Observation/Scout Helicopter Repairer</p> <p>15X AH-64 Armament/Electrical Systems Repairer</p> <p>15Y AH-64D Armament/ Electrical Systems Repairer</p> <p>15Z Aircraft Maintenance Senior Sergeant</p> <p>Special Forces Branch</p> <p>18B Special Forces Weapons Sergeant</p> <p>18C Special Forces Engineer Sergeant</p> <p>18D Special Forces Medical Sergeant</p> <p>18E Special Forces Communications Sergeant</p> <p>18F Special Forces Assistant Operations & Intelligence Sergeant</p>	<p>Armor Branch</p> <p>19D Cavalry Scout</p> <p>19K Armor Crewmember</p> <p>19Z Armor Senior Sergeant</p> <p>Corps of Engineers Branch</p> <p>21B Combat Engineer (Formerly 12B)</p> <p>21C Bridge Crewmember</p> <p>21D Diver</p> <p>21E Heavy Construction Equipment Operator</p> <p>21G Quarrying Specialist</p> <p>21H Construction Engineer</p> <p>21J General Construction Equipment Operator</p> <p>21K Plumber</p> <p>21L Lithographer</p> <p>21M Firefighter</p> <p>21N Construction Equipment Supervisor</p> <p>21P Prime Power Production Specialist</p> <p>21Q Transmission and Distribution Specialist</p> <p>21R Interior Electrician</p> <p>21S Topographic Surveyor</p> <p>21T Technical Engineering Specialist</p> <p>21U Topographic Analyst</p> <p>21V Concrete and Asphalt Equipment Operator</p> <p>21W Carpentry and Masonry Specialist</p> <p>21X General Engineering Supervisor</p> <p>21Y Topographic Engineering Supervisor</p> <p>21Z Combat Engineering Senior Sergeant</p> <p>Signal Corps Branch</p> <p>25B Information Systems Operator Analyst (to be renamed <i>Information Technology Specialist</i> in Oct/07)</p> <p>25C Radio Operator Maintainer</p> <p>25D Telecommunications Operator/Maintainer (to be deleted in Oct/07)</p> <p>25F Network Switching Systems Operator/Maintainer</p> <p>25L Wire Systems Installer</p> <p>25M Multimedia Illustrator</p> <p>25N Nodal Network Systems Operator/Maintainer</p> <p>25P Microwave Systems Operator/Maintainer</p> <p>25Q Multichannel Transmission Systems Operator</p> <p>25R Visual Information/Audio Equipment Repairer</p> <p>25S Satellite Communication Systems Operator/Maintainer</p> <p>25T Satellite/Microwave Systems Chief</p> <p>25U Signal Support Systems Specialist</p> <p>25V Combat Documentation & Production Specialist</p> <p>25W Telecommunications Operations Chief</p> <p>25X Senior Signal Sergeant</p> <p>25Y Information Systems Chief (to be deleted in Oct/07)</p> <p>25Z Visual Information Operations Chief</p> <p>Judge Advocate General Branch</p> <p>27D Paralegal Specialist</p> <p>Military Police Corps Branch</p> <p>31B Military Police</p> <p>31D CID Special Agent</p> <p>31E Internment/Resettlement Specialist</p>	<p>Military Intelligence Branch</p> <p>33W (35T) MI Systems Maintainer/Integrator</p> <p>96B (35F) Intelligence Analyst</p> <p>96D (35G) Imagery Analyst</p> <p>96H (35H) Imagery Ground Station Operator</p> <p>96R (35H) Ground Surveillance Systems Operator</p> <p>96U (35K) Unmanned Aerial Vehicle Operator</p> <p>96Z (35X) Intelligence Senior Sergeant</p> <p>97B (35L) Counterintelligence Agent</p> <p>97E (35M) Human Intelligence Collector</p> <p>97L (35O) Translator/Interpreter</p> <p>97Z (35Y) Counterintelligence/Human Intelligence Senior Sergeant</p> <p>98C (35N) Signal Intelligence Analyst (Linguist)</p> <p>98G (35P) Cryptologic Linguist</p> <p>98P (35U) Multi-Sensor Operator</p> <p>98Y (35S) Signals Collector/Analyst</p> <p>98Z (35Z) Signals Intelligence Senior Sergeant</p> <p>09L (35V) Translator Aide</p> <p>05h EW/SIGINT Morse Intercept Operator</p> <p>Psychological Operations Corps Branch</p> <p>37F Psychological Operations Specialist</p> <p>Civil Affairs Branch</p> <p>38B Civil Affairs Specialist</p> <p>Adjutant General Branch</p> <p>42A Human Resource Specialist</p> <p>42F Human Resource Systems Information Specialist</p> <p>42L Administration Specialist (to be deleted)</p> <p>42R9B Trumpet Player</p> <p>42R9C Baritone or Euphonium Player</p> <p>42R9D French Horn Player</p> <p>42R9E Trombone Player</p> <p>42R9F Tuba Player</p> <p>42R9G Flute or Piccolo Player</p> <p>42R9H Oboe Player</p> <p>42R9J Clarinet Player</p> <p>42R9K Bassoon Player</p> <p>42R9L Saxophone Player</p> <p>42R9M Percussion Player</p> <p>42R9N Piano Player</p> <p>42R9T Guitar Player</p> <p>42R9U Electric Bass Guitar Player</p> <p>42S Special Band member</p> <p>Finance Branch</p> <p>44C Finance Specialist/Accounting Specialist</p> <p>Public Affairs Branch</p> <p>46Q Public Affairs Specialist</p> <p>46R Broadcast Journalist</p> <p>46Z Public Affairs Chief</p> <p>Chaplain Branch</p> <p>56M Chaplain Assistant</p>	<p>CMF 63 - Mechanical Maintenance</p> <p>44B Metal Worker</p> <p>44E Machinist</p> <p>45B Small Arms/Artillery Repairer</p> <p>45F Fire Control Repairer</p> <p>45K Armament Repairer</p> <p>52C Utilities Equipment Repairer</p> <p>52D Power Generation Equipment Repairer</p> <p>62B Construction Equipment Repairer</p> <p>63A M1 Abrams Tank Turret Mechanic/M1 Abrams Tank System Mechanic</p> <p>63B Light-Wheel Vehicle Mechanic/Heavy Wheel Vehicle Mechanic/Wheel Vehicle Repairer</p> <p>63D Artillery Mechanic</p> <p>63H Fuel and Electrical Repairer/Track Vehicle Mechanic</p> <p>63J Quartermaster and Chemical Equipment Repairer</p> <p>63M M2-3 Bradley Fighting Vehicle System Mechanic/Bradley Fighting Vehicle Systems Turret Mechanic</p> <p>63X Truck Vehicle Repairer</p> <p>63Z All Wheel Vehicle Repairer</p> <p>63Z Mechanical Maintenance Supervisor</p> <p>Medical Department Branches</p> <p>68A Medical Equipment Repairer</p> <p>68D Operating Room Specialist</p> <p>68E Dental Specialist</p> <p>68C Patient Administration Specialist</p> <p>68H Optical Laboratory Specialist</p> <p>68I Medical Logistic Specialist</p> <p>68K Medical Laboratory Specialist</p> <p>68M Hospital Food Specialist</p> <p>68P Radiology Specialist</p> <p>68Q Pharmacy Specialist</p> <p>68R Veterinary Food Inspection Specialist</p> <p>68S Preventive Medicine Specialist</p> <p>68T Animal Care Specialist</p> <p>68V Respiratory Specialist</p> <p>68W Health Care Specialist (aka Combat Medic)</p> <p>68X Mental Health Specialist</p> <p>68Z Chemical Maintenance NCO</p> <p>Chemical Branch</p> <p>74D Chemical Operations Specialist (formerly 54B)</p> <p>CMF 79 - Recruiting and Retention</p> <p>79R Recruiter Noncommissioned Officer</p> <p>79S Career Counselor</p> <p>79T Recruiting and Retention NCO</p> <p>79V Retention and Transition Noncommissioned Officer</p> <p>Transportation Branch</p> <p>88H Cargo Specialist</p> <p>88K Watercraft Operator</p> <p>88L Watercraft Engineer</p> <p>88M Motor Transport Operator</p> <p>88N Traffic Management Coordinator</p> <p>88P Railway Equipment Repairer</p> <p>88T Railway Section Repairer</p> <p>88U Railway Operations Crewmember</p> <p>88Z Transportation Senior Sergeant</p>	<p>Ordnance Branch</p> <p>89B Ammunition Specialist</p> <p>89D Explosive Ordnance Disposal Specialist</p> <p>Quartermaster Corps Branch</p> <p>92A Automated Logistical Specialist</p> <p>92F Petroleum Supply Specialist</p> <p>92G Food Service Specialist</p> <p>92L Petroleum Laboratory Specialist</p> <p>92M Mortuary Affairs Specialist</p> <p>92R Parachute Rigger</p> <p>92S Shower/Laundry and Clothing Repair Specialist</p> <p>92W Water Treatment Specialist</p> <p>92Y Unit Supply Specialist</p> <p>92Z Senior Noncommissioned Logistician</p> <p>CMF 94 - Electronic Maintenance</p> <p>94A Land Combat Electronic Missile System Repairer</p> <p>94B Air Traffic Control Equipment Repairer</p> <p>94E Radio and Communications Security Repairer</p> <p>94F Special Electronics Devices Repairer</p> <p>94H Test, Measurement & Diagnostic Equipment Support Specialist</p> <p>94K Automatic Test Equipment Operator/Maintainer</p> <p>94L Avionics Communications Equipment Repairer</p> <p>94M Radar Repairer</p> <p>94P Multiple Launch Rocket System Repairer</p> <p>94R Avionics System Repairer</p> <p>94S Patriot System Repairer</p> <p>94T Avenger System Repairer</p> <p>94W Electronic Maintenance Chief</p> <p>94V Integrated Family of Test Equipment</p> <p>94Z Senior Electronic Maintenance Chief</p> <p>Branch Immaterial (not oriented to a branch)</p> <p>00Z Command Sergeant Major</p> <p>Commissioned Officer & Warrant Officer MOS</p> <p>Officer MOS's are usually two numerical digits plus a letter (most of the time "alpha"). Letterless MOS's are ambiguous and have several specific MOS's within the E.g. 62 contains 62A (Emergency Physician) and 62B (Field Surgeon).</p> <p>Warrant Officer MOS's (known as WOMOS) are three numerical digits plus a letter, except 09W who is not y WO.</p> <p>Officer Candidates</p> <p>09R Cadet</p> <p>09S Officer Candidate</p> <p>09W Warrant Officer Candidate</p> <p>Infantry Branch</p> <p>11A Infantry Officer</p> <p>Field Artillery Branch</p> <p>13A Field Artillery Officer</p> <p>131A Field Artillery Targeting Technician</p> <p>Air Defense Artillery Branch</p> <p>14 Air Defense Artillery Officer</p> <p>140A Command and Control Systems Technician</p> <p>140E Air and Missile Defense (AMD) Tactician/Technician (Patriot Systems Technician)</p> <p>140X Air Defense Artillery (ADA) Immaterial</p>
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Notes

There are a LOT of unique Military Occupational Specialties in the Army ... everything from Infantryman (11B) to French Horn Player (42R9D).



U.S. Army Military Occupational Specialties

Aviation Branch

15 Aviator Officer
 150A Air Traffic and Air Space Maintenance Technician
 150U Tactical Unmanned Aerial Vehicle Operations Technician (still classified at 350K until official transfer to Aviation Branch)
 151A Aviation Maintenance Technician
 152C OH-6 Pilot
 152B OH-58A/C Pilot
 152D OH-58D Pilot
 152F AH-64A Pilot
 152H AH-64D Pilot
 153A Rotary Wing Aviator (Aircraft Nonspecific)
 153B UH-1 Pilot
 153D UH-60 Pilot
 153DD UH-60 MEDEVAC Pilot
 153E MH-60 Pilot
 154C CH-47D Pilot
 154E MH-47 Pilot
 155A Fixed Wing Aviator (Aircraft Nonspecific)
 155E C-12 Pilot
 155F Jet Aircraft Pilot
 155G O-5A/EO-5B/RC-7 Pilot
Special Forces Branch
 18A Special Forces Officer
 180A Special Forces Warrant Officer
Armor Branch
 19A Armor, General
 19B Armor
 19C Cavalry
Corps of Engineers Branch
 21A Engineer Officer
 210A Utilities Operation and Maintenance Technician
 215D Geospatial Information Technician (Old - Terrain Analysis Technician)
Signal Corps Branch
 25A Signal Officer
 250N Network Management Technician
 251A Information Systems Technician
 254A Signal Systems Support Technician
 255Z Senior Signal Systems Technician
Judge Advocate General Branch
 27A JAG Corps Attorney
 27B Military Judge
 270A Legal Administrator
Military Police Corps Branch
 31A Military Police Officer
 311A CID Special Agent

Military Intelligence Branch

35D Military Intelligence Officer
 350F All Source Intelligence Technician
 350G Imagery Intelligence Technician
 350Z Attaché Technician
 350K (150U) Tactical Unmanned Aerial Vehicle Operations (transferring to Aviation Branch in Summer 07)
 351L Counterintelligence Technician
 351M Human Intelligence Collection Technician
 351Y Area Intelligence Technician
 352N Traffic Analysis Technician
 352P Voice Intercept Technician
 352Q Morse Intercept Technician
 352R Emanations Analysis Technician
 352S Non Morse Intercept Technician
 352T Intelligence and Electronic Warfare Technician
Psychological Operations Corps Branch
 37A Psychological Operations Officer
 37X Psychological Operations Officer, Designated
Civil Affairs Branch
 38A Civil Affairs Officer
 38X Civil Affairs Officer, Designated
Adjutant General Branch
 42B Personnel Systems Management Officer
 42C Band Officer
 420A Military Personnel Technician
 420C Bandmaster
Finance Branch
 44A Finance Officer
Chaplain Branch
 56 Chaplain
 56A Command and Unit Chaplain
 56D Clinical Pastoral Educator
Medical Department Branches
 60A OPERATIONAL MEDICINE OFFICER
 60B NUCLEAR MEDICINE OFFICER
 60C PREVENTIVE MEDICINE OFFICER
 60D OCCUPATIONAL MEDICINE OFFICER
 60F PULMONARY DISEASE CRITICAL CARE OFFICER
 60G GASTROENTEROLOGIST
 60H CARDIOLOGIST
 60I OBSTETRICIAN AND GYNECOLOGIST
 60K UROLOGIST
 60L DERMATOLOGIST
 60M ALLERGIST, CLINICAL IMMUNOLOGIST
 60N ANESTHESIOLOGIST
 60P PEDIATRICIAN
 60Q PEDIATRIC SUB-SPECIALIST
 60R CHILD NEUROLOGIST
 60S OPHTHALMOLOGIST
 60T OTOLARYNGOLOGIST
 60U CHILD PSYCHIATRIST
 60V NEUROLOGIST
 60W PSYCHIATRIST

61A NEPHROLOGIST
 61B MEDICAL ONCOLOGIST/HEMATOLOGIST
 61C ENDOCRINOLOGIST
 61D RHEUMATOLOGIST
 61E CLINICAL PHARMACOLOGIST
 61F INTERNIST
 61G INFECTIOUS DISEASE OFFICER
 61H FAMILY MEDICINE
 61J GENERAL SURGEON
 61K THORACIC SURGEON
 61L PLASTIC SURGEON
 61M ORTHOPEDIC SURGEON
 61N FLIGHT SURGEON
 61P PHYSIATRIST
 61Q RADIATION ONCOLOGIST
 61R DIAGNOSTIC RADIOLOGIST
 61U PATHOLOGIST
 61W PERIPHERAL VASCULAR SURGEON
 61Z NEUROSURGEON
 62 Medical Corps Officer
 62A Emergency Physician
 62B Field Surgeon
 63 Dental Corps Officer
 63A General Dentist
 63B Comprehensive Dentist
 63D Periodontist
 63E Endodontist
 63F Prosthodontist
 63H Public Health Dentist
 63K Pediatric Dentist
 63M Orthodontist
 63N Oral and Maxillofacial Surgeon
 63P Oral Pathologist
 63R Executive Dentist
 64A Veterinary Corps Officer
 640A Veterinary Services Food Safety Technician
 65 Medical Specialist Corps Officer
 65A Occupational Therapy
 65B Physical Therapy
 65C Dietitian
 65D Physician Assistant
 65X Specialist Allied Operations
 66 Nurse Corps Officer
 66B Community Health Nurse
 66C Psychiatric/Mental Health Nurse
 66E Perioperative Nurse
 66F Nurse Anesthetist
 66G Obstetrics and Gynecology
 66H Medical-Surgical Nurse
 66N Generalist Nurse
 66P Family Nurse Practitioner

67 Medical Service Corps Officer

67A Health Services
 67B Laboratory Sciences
 67C Preventive Medicine Sciences
 67D Behavioral Sciences
 67E Pharmacy
 67F Optometry
 67G Podiatry
 67J Aeromedical Evacuation
 670A Health Services Maintenance Technician
 70A Healthcare Administrator
 70B Health Services Officer
 70C Comptroller
 70D Information Systems Manager
 70E Patient Administrator
 70F Human Resources Manager
 70H Plans, Operations, Intelligence Training, and Security
 70K Medical Logistics
 70K91 Health Facilities Management
Chemical Branch
 74A Chemical, General
 74B Chemical Operations and Training
 74C Chemical Munitions and Materiel Management
Transportation Branch
 88A Transportation Officer
 88D Transportation Officer - Motor/Rail
 880A Marine Deck Officer
 881A Marine Engineering Officer
 882A Mobility Officer
Ordnance Branch
 91A Ordnance Officer
 890A Ammunition Technician
 913A Armament Systems Maintenance Technician
 914A Allied Trades Technician
 915A Automotive Maintenance Technician
 915E Senior Automotive Maintenance/Senior Ordnance Logistics Officer
 919A Engineer Equipment Maintenance Technician
Quartermaster Corps Branch
 92A Quartermaster Officer
 920A Property Accounting Technician
 920B Supply Systems Technician
 921A Airdrop Systems Technician
 922A Food Service Technician
 923A Petroleum Systems Technician
CMF 94 - Electronic Maintenance
 948B Electronic Systems Maintenance Technician
 948D Electronic Missile Systems Maintenance Technician
 948E Senior Electronics Maintenance Technician

Total = 367 Specialties

Notes

There are at least 367 specialties, an hundreds of additional job assignments and roles within teams and groups.

How many of these can benefit for training via simulation? How many of these have no simulation because our current approaches just cannot afford it?



One Million Soldiers

➤ Army Size*

❖ Regular Army:	507,082
❖ Army National Guard:	333,177
❖ <u>Army Reserve:</u>	<u>189,005</u>
❖ Total:	1,029,264



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*Numbers as of: Regular Army, 2007; ARNG & USAR, 2005

Notes

There are over one million soldiers in the Army. How can we possibly offer training to all of them on any kind of reasonable schedule?

From: http://en.wikipedia.org/wiki/United_States_Army

As of March 31, 2007, the Regular Army reported a strength of 507,082 soldiers.[2] By the end of 2005, the Army National Guard (ARNG) reported 333,177 and the United States Army Reserve (USAR) reported 189,005,[3] putting the approximate combined component strength total at 1,029,264.

2. <http://siadapp.dmdc.osd.mil/personnel/MILITARY/ms1.pdf>

3. <http://www.armyg1.army.mil/hr/demographics/FY05%20Army%20Profile.pdf>



Training One Million Soldiers

1,000,000 soldiers =

100 soldiers per event X 10,000 events each year

1,000 soldiers per event X 1,000 events each year

10,000 soldiers per event X 100 events each year



Notes

If we train them in groups, then if we create groups of 100 we only have to create 10,000 training events every year for each soldier to have a single training experience. If we clump those up to 1,000 soldiers per group, we need only 1,000 training events. At groups of 10,000 we need only 100 events per year – which is roughly 2 events every week. These numbers are difficult or impossible to meet.

Millions Served



Notes

Are there other organizations that have to deal with millions of customers?

- McDonalds serves 47 million customers per day.
- Google conducts 130 million searches per day.
- World of Warcraft hosts 635,000 players per day.

That last number has some similarity with delivering training events to one million soldiers.

Market vs. Central Planning



Who decides when we have enough options?

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Notes

In the United States of America we believe very strongly in the wisdom of market forces. This means that the dynamic interplay of customer demand and provider supply will balance each other. Where there is a profit demand, there will be products to meet that demand. When the demand is satisfied, then the creation of demand will slow-down, stop, or reverse. We do not believe in central planning in which a committee decides how much coffee should be available in a city or a city block; how many MMOGs should be created; or how many mobile service providers should exist.



Sim Products Characteristics

- Heavyweight computer hardware
- Dedicated computer networks
- Tightly integrated Client/Server software
- Large local support staff
- One-to-one relationships between hardware, software, staffing, and the simulation event.



Notes

Most training simulations are heavyweight systems. They have traditionally required dedicated hardware and networks, customer software, large support staffs, and special facilities. Finally, there has traditionally been a one-to-one relationship between all of these and a single training event. We have not learned to take advantage of scale in the same way that the IT world is learning to reduce its footprint, power consumption, and support staff right now.



IT Service Characteristics

- Professionally Managed
- Customer Oriented
- 24/7 Access
- Globally Accessible
- Facility, Geography, and Time Independent
- Light Clients, Remote Updates
- Controlled Access

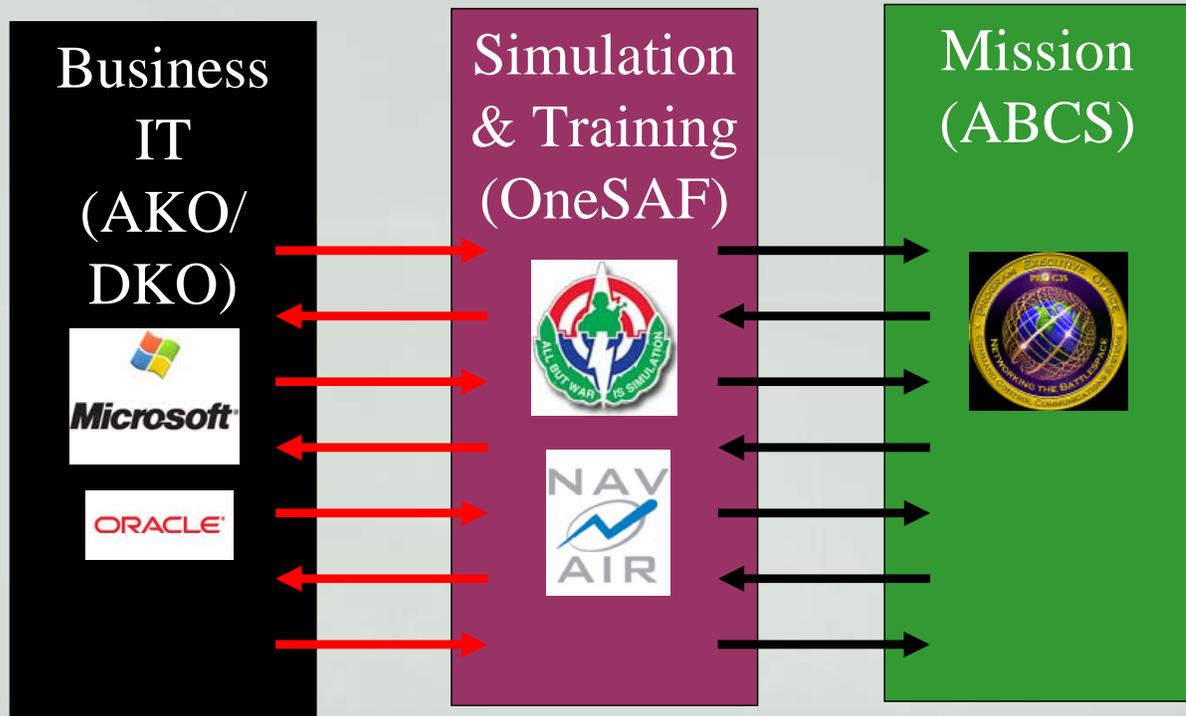


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Notes



Simulation in Your IT



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Notes

Since the 1990's it has been very popular to work on integrating simulations with C4I systems like MCS, ASAS, AFATDS, FAADC3I, AMDEWS, GCCS-A, etc. But we have not made any moves to integrate our training systems with the business-side IT desktop that is being deployed to soldiers. The goal there is not to "train as we fight", but to "train wherever we are fighting". The goal is customer-driven training from equipment that the soldier can access when he/she is ready, not when it comes up on a master training schedule.

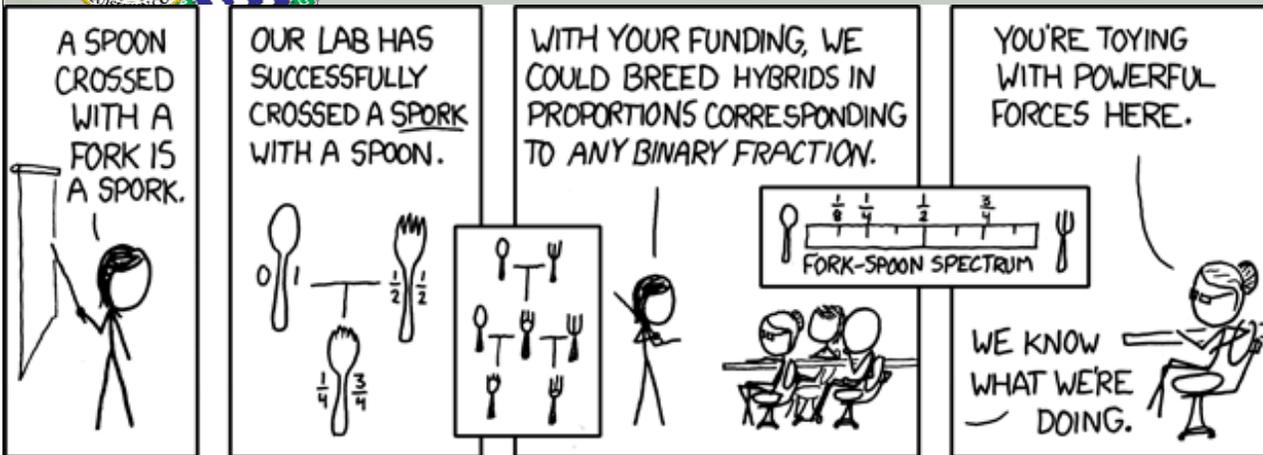
The screenshot displays the Army Knowledge Online (AKO) web portal. At the top, the AKO logo is prominent, along with navigation icons for Email, Files, Forums, Groups, IM/Chat, My Forms, and Video. The forum section, titled 'MILITARY GAMERS!!!', lists various topics including 'WoW: Characters and Servers' and 'LOTR online'. A message list on the right shows a thread about 'WoW: Characters and Servers' with 196 messages. Below the forum, a map of California is shown with a 'Real-Time Predictions' overlay, indicating a route from California to the Richmond District. The browser address bar shows the URL 'https://www.us.army.mil/suite/portaltop.do?p=139421'.

Notes

AKO is a fantastic resource. It allows soldiers to handle many of their inner Army business needs. But one need that is common to all soldiers is training – we have not looked at AKO, or networks like it, as a means of delivering the training that all one million soldiers need.



Breeding Hybrids



- Simulation
- + Web-based Training
- + Computer Games
- + Enterprise IT
- = A Bloody Mess

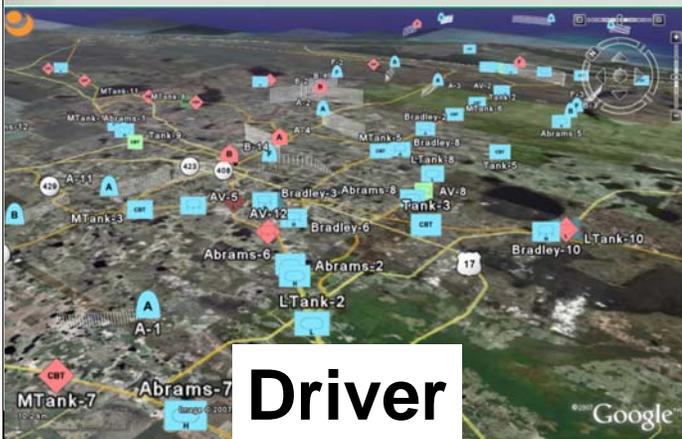
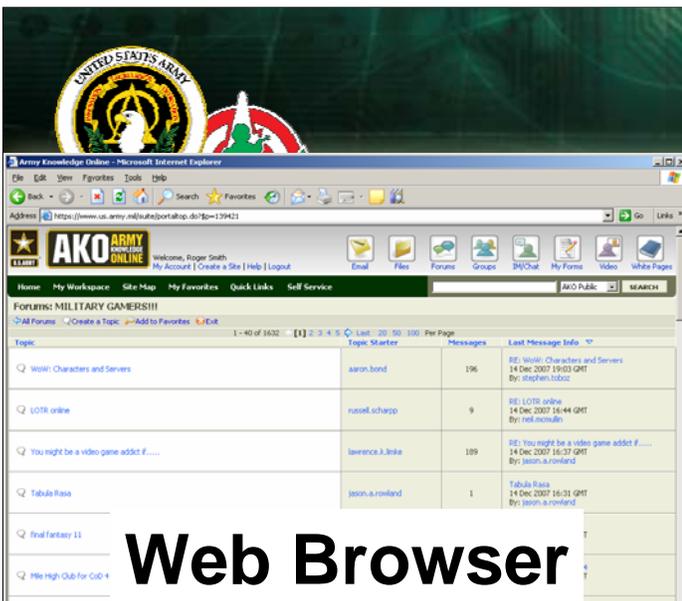
<http://www.xkcd.com/419>



Notes

Delivering training via simulations to soldiers all over the world via their existing desktop computers, networks, and servers is going to require bringing together the ideas behind Simulation, WBT, Computer Games, and Enterprise IT. It is a difficult problem – a Bloody Mess as the British might say.

Desktop Client Options



Notes

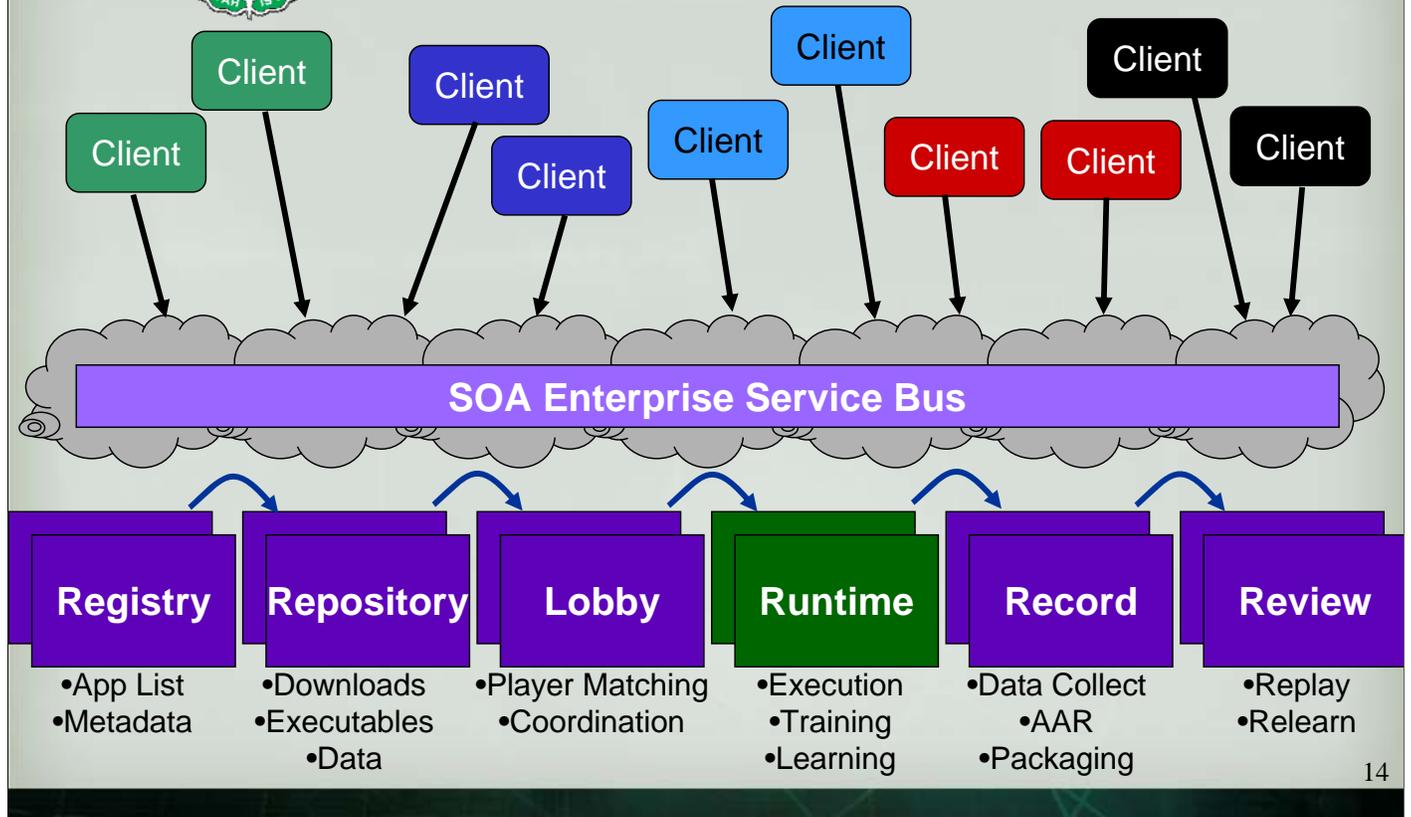
The desktop that most people experience is a little dated. “Serious business” requires email (Microsoft Outlook), web interfaces (Microsoft Internet Explorer) to server applications (Oracle ERP), productivity tools (Microsoft Office), and document sharing (Microsoft SharePoint). It has not evolved into 3D content or to allow the content that is unique to individual users.

We can deliver training to the desktop in a number of different manners:

- The Web Browser is a great universal tool for accessing HTML content.
- A Plug-in can give the browser even more power to handle content that is 3D, interactive, and multi-player.
- A Driver is a program that does not have content itself, but has the ability to load content on demand. Google Earth is such a driver and could be used as a simulation client.
- Full Applications are those that bring their own software and data that is unique to the application, such as Americas Army or Ambush computer games.



Matching Customers to Services



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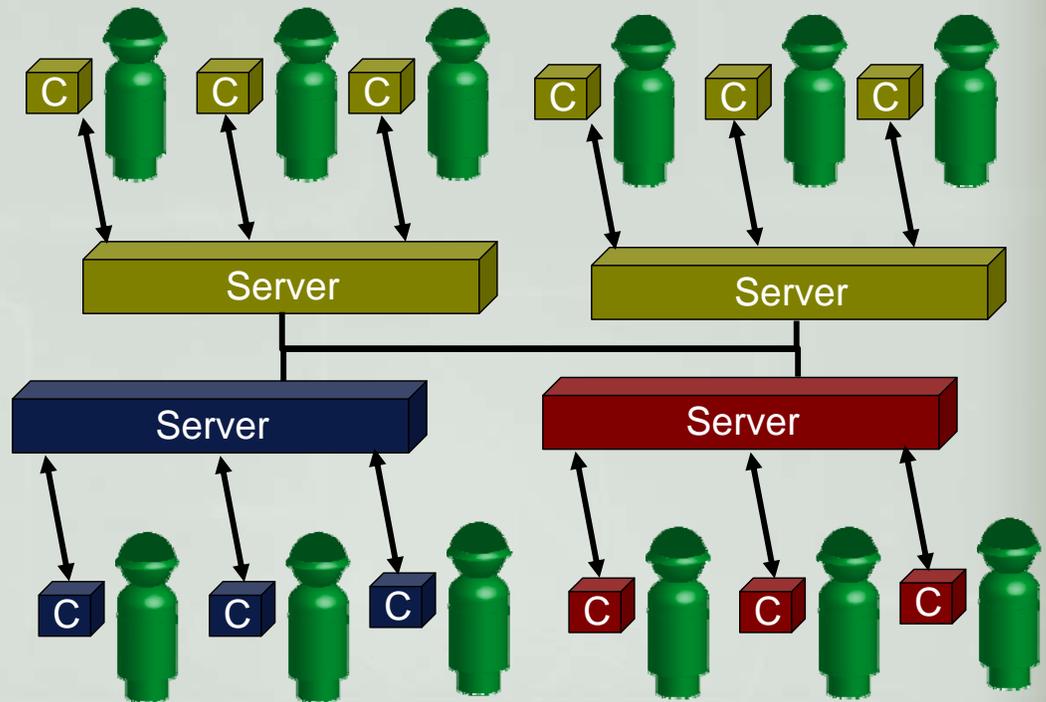
Notes

With one million soldiers trolling the web for different kinds of content to train with, it will not be possible to tie each application to a specific server site. This is going to require a system that can dynamically connect the customer (client) to the server based on the content that is needed, the connects available, and the competing traffic that exists. Service Oriented Architectures are working toward this type of connectivity.



Use Cases

1. Lone Player
2. Player w/ Server
3. Multi-player / Multi-server
4. Multi-Event



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Notes

Soldiers are going to need more than one way to train. Much content is a single user experience. It allows a soldier to jump-in and pick-up a skill all alone and when he/she needs it. This may be solely on the client-side desktop, or it may include the use of a single server. Other scenarios require that multiple players work together and use the resources of multiple clients and multiple servers to create the shared training experience necessary.



...not everyone lives in a castle



“But even here 80% of soldiers have access to a laptop computer and network”
- SFC Richard Colon, US SOCOM

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Notes

All of this sounds a little Buck Rogers-ish given the limited computing power and network bandwidth that is available to soldiers ... today. But could the inventors of the Internet have envisioned it support billions of users and millions of servers around the world. Like everyone else, soldiers are getting more network and computing every year. We cannot build "Simulation as an IT Service" in one year. There are too many moving parts. By the time we have created it, there will be enough bandwidth and computing cycles to support it.



Challenges

- Military IT Infrastructure
 - ❖ Security configurations vary by organization and by day
 - ❖ Apps cannot be guaranteed to work from any node in the IT network
- Ownership of Training Applications
 - ❖ Military apps have typically fallen into at least 3 major camps: Business, Mission, Training
 - ❖ Each have their own separate networks
 - ❖ Running a Training app across the Business infrastructure raises a number of supportability and contracting questions

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Notes



Conclusion ... Advantages

- Reduced equipment ownership costs and obsolescence
- On-demand user access to the best applications
- Commercial architectures to access advances in IT practices
- Centralized control of server applications
- Currency of client applications

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Notes