

Software Maintenance Growth:

Opportunities and

Challenges



Software Panel Members

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Software Panel Deliverables

- ***Articulate the challenges industry and DoD face with the rapid growth of software intensive systems***
- ***Highlight definitional, policy, organizational, and management aspects of software maintenance and sustainment***
- ***Provide industry and DoD insight on meeting the challenges of managing software maintenance and sustainment in DoD***

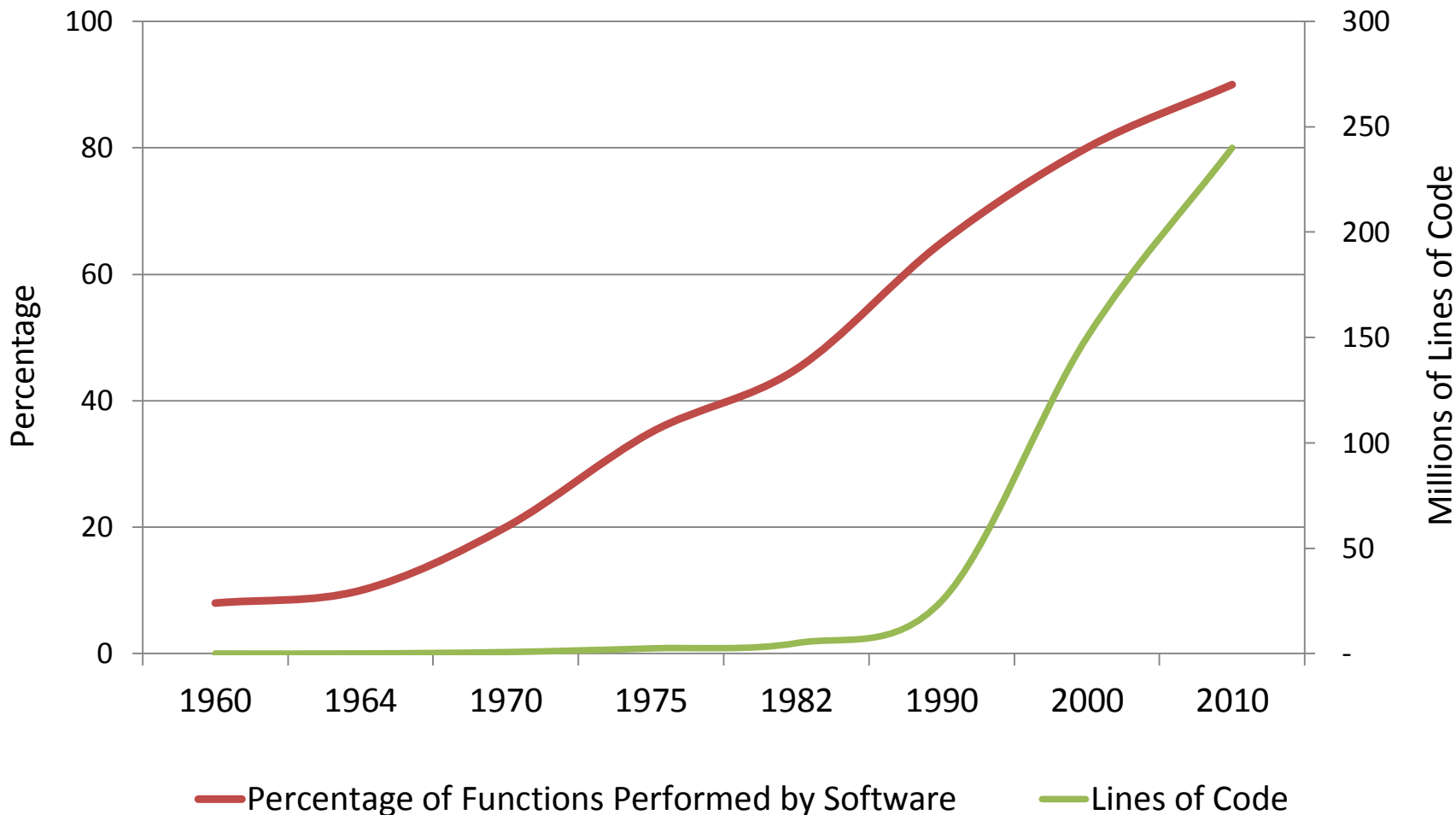


Agenda

- ❖ Software Maintenance Trends
- ❖ “The Software Universe”
- ❖ Panelist Introductions



Software Maintenance Trends – Growth

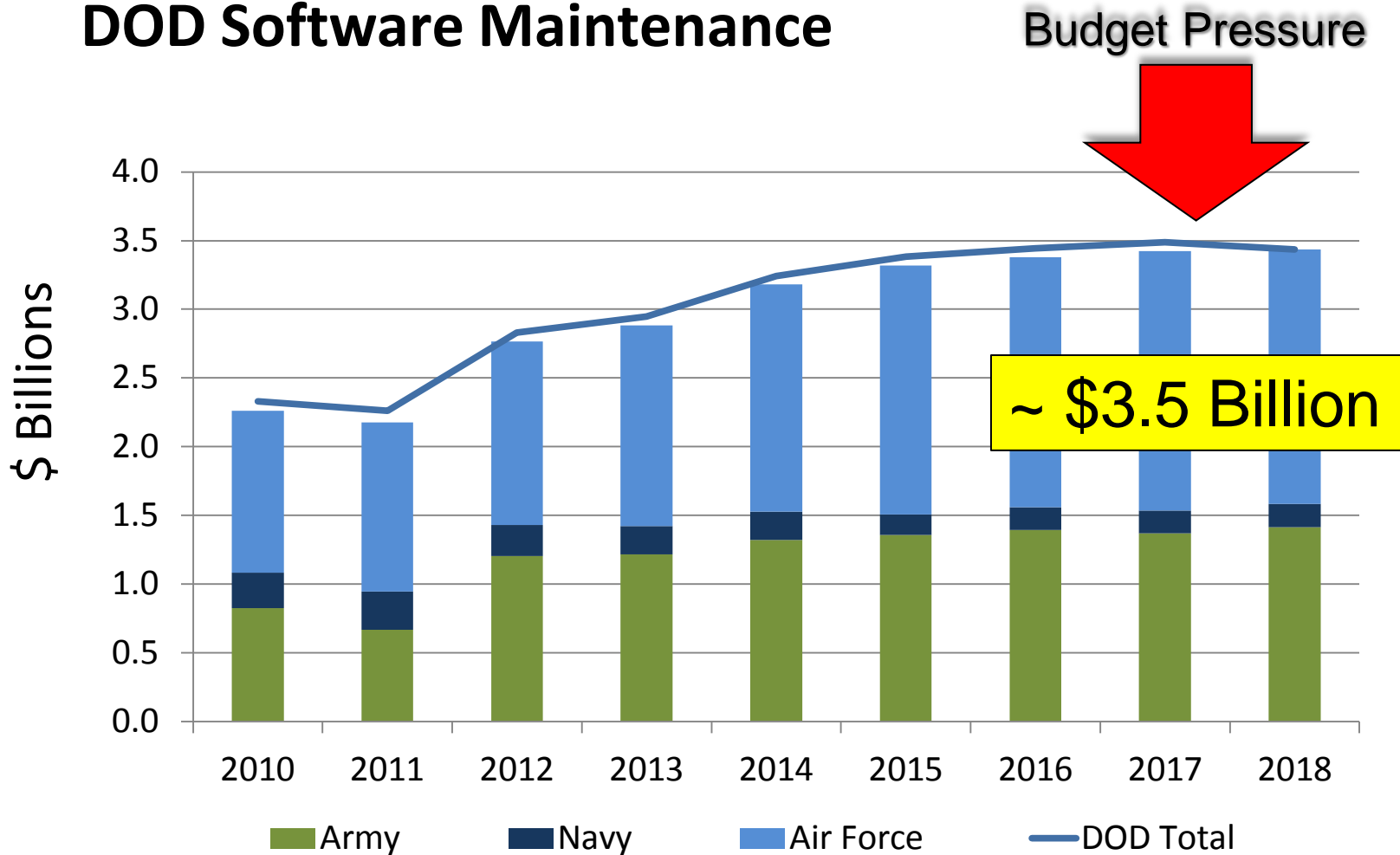


Weapons Systems are Increasingly Software Intensive



Software Maintenance Trends – Resources

DOD Software Maintenance

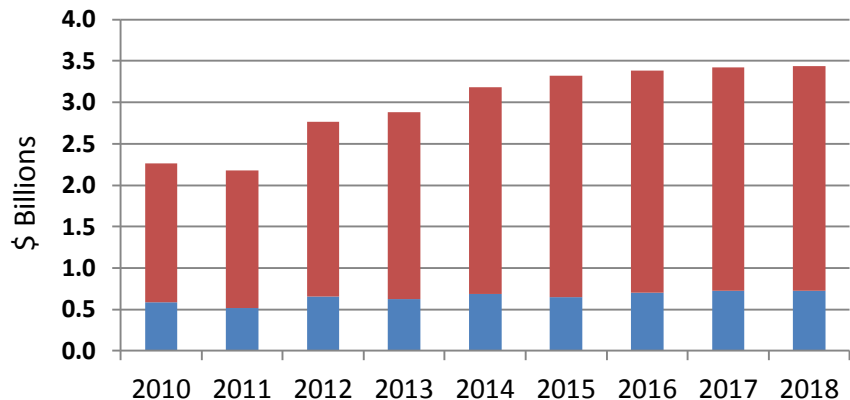


Source: POM 2014 PB-45 SNaP Data, both Organic and Contractor Requirements



Software Maintenance Trends – Resources

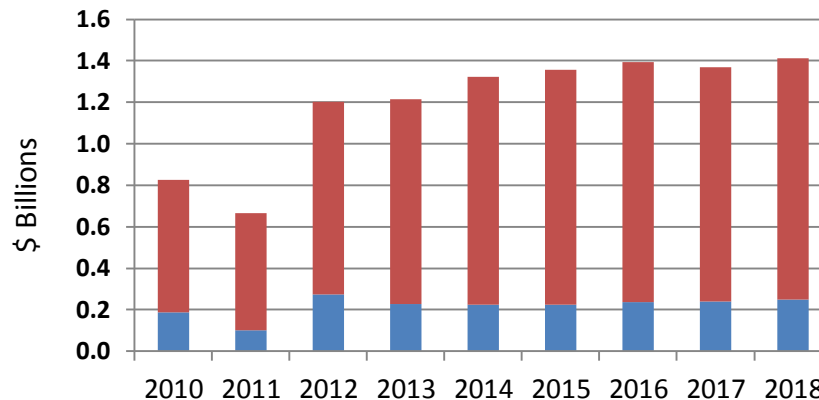
DoD Software Maintenance (\$B)



Source: POM 2014 PB-45 SNaP Data

■ Organic ■ Contract

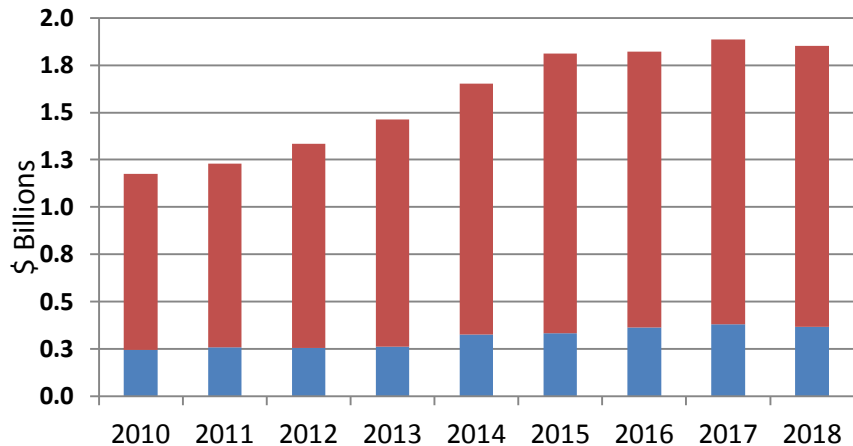
Army Software Maintenance (\$B)



Source: POM 2014 PB-45 SNaP Data

■ Organic ■ Contract

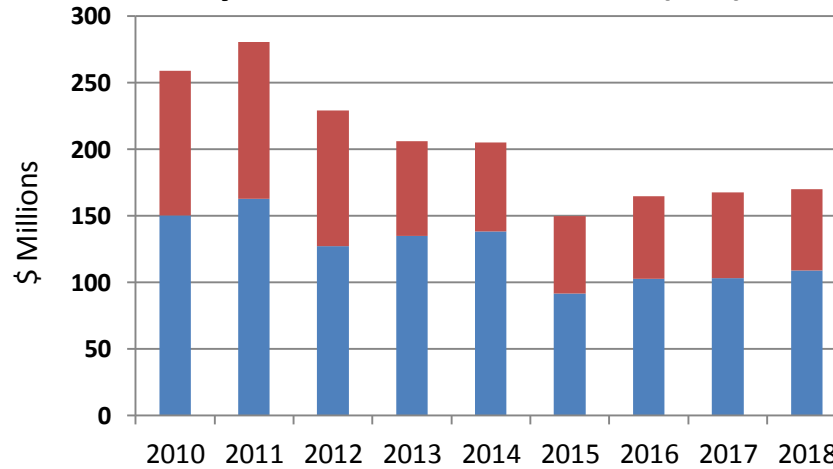
Air Force Software Maintenance (\$M)



Source: POM 2014 PB-45 SNaP Data

■ Organic ■ Contract

Navy Software Maintenance (\$M)



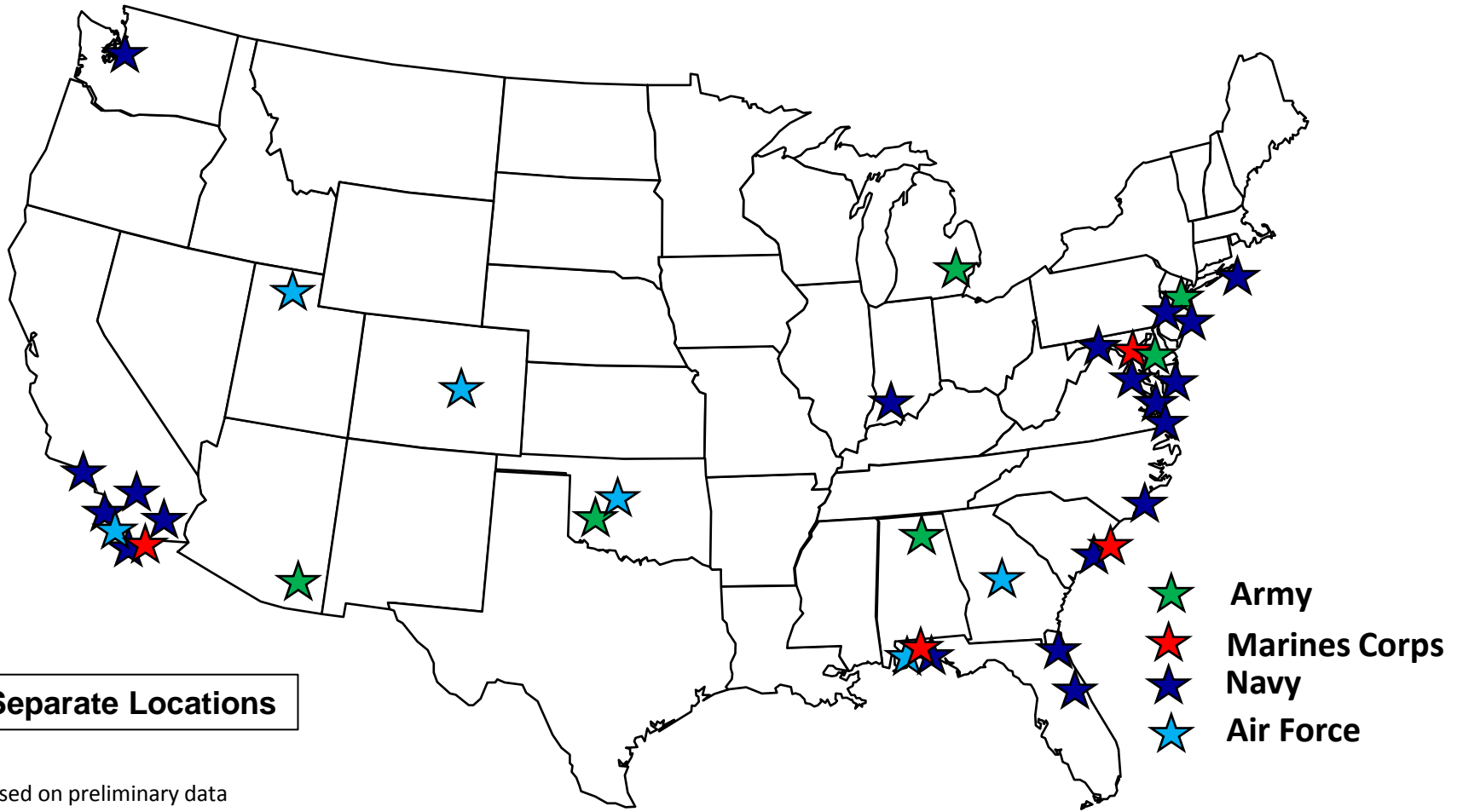
Source: POM 2014 PB-45 SNaP Data

■ Organic ■ Contract



Software Universe

Organic Depot-Level Software Activities by Location



Based on preliminary data



Software Universe (cont.)

Organic Depot-Level Software Activities (Organization and Location)

Army

AMRDEC, Redstone Arsenal, AL
ARDEC SEC Picatinny Arsenal, NJ
CECOM SEC/CERDEC SED Aberdeen (APG), MD
CECOM SEC/CERDEC SED Ft. Huachuca, AZ
CECOM SEC/CERDEC SED Ft. Sill, OK
TARDEC Detroit Arsenal, MI

Marine Corps

Aberdeen Proving Ground, MD
Camp Pendleton, CA
NSWC Panama City, FL
SPAWAR Systems Center Atlantic, SC

Navy

FRC East, NC
FRC Southeast, FL
FRC Southwest, CA
NAWC China Lake, CA
NAWC Lakehurst, NJ
NAWC Orlando, FL
NAWC Patuxent River, MD
NAWC Point Magu, CA
NSWC Carderock, MD

Navy (cont.)

NSWC Crane, IN
NSWC Corona, CA
NSWC Dam Neck, VA
NSWC Indian Head, MD
NSWC Panama City, FL
NSWC Philadelphia, PA
NSWC Port Hueneme, CA
NUWC Keyport, WA
NUWC Newport, RI
Norfolk Naval Shipyard, VA
SPAWAR Headquarters San Diego, CA
SPAWAR Systems Center Atlantic, MD
SPAWAR Systems Center Atlantic, VA
SPAWAR Systems Center Atlantic, SC

Air Force

Ogden ALC, UT
Oklahoma City ALC, OK
Patrick AFB, FL
Peterson AFB, CO
Warner Robins ALC, GA
Vandenberg AFB, CA

- Preliminary data. Computer engineers (0854), computer scientists (1550), electronics engineers (0855) and electronics technicians (0856) . Possess the necessary skills and are likely/ potentially involved with Software Sustainment.



Software Universe (cont.)

Commercial Companies Supporting DOD Software

Alliant Tech	General Dynamics	Lockheed Martin	Sanmina SCI
Applied Data	GD/LM	LM/NG	Sierra Nevada
Applied Sys	General Electric	Mathtech	Selex Comm
Augusta	General Atomics	Mnemonics	Sikorsky Helicopter
BAE	Goodrich	Northrop Grumman	Smith Industries
Ball Aero	GTRI	NSD Software	Smiths Aerospace
Bell Helicopter	Hamilton Standard	ORCA	TCOM
Boeing	Harris	Penny	Telecordia
CAE	Honeywell	Pole Zero	Titan System
Curtiss-Wright	IBM	Pratt & Whitney	Telephonics
Draper Laboratory	Integrated SIM	Raytheon	Trimble Nav
Eaton Aerospace	ITT Elect	RMS SW Eng	Tybrin Corp
Elebit Systems	KinetX	Rockwell Collins	ViaSat Inc
Flight Safety	Korry Elect	Rolls Royce	Viecore
FLIR	L-3 Comm	SAIC	Woodward

Does not include corporate sub-divisions



Panelist Introductions

- Steve Michaluk, OSD Maintenance Policy and Programs
- Mike McClendon, Software Enterprise Institute
- Ned Keeler, Director, Army Software Engineering Center
- Verle Johnson, Chief Avionics Engineer, F-22
- Joseph A. Leadley, Senior Vice President & General Manager, Engility



Backup



Software Maintenance Issues

- **Policy/Definitional**
- **Is software different? Why? How?**
- **COTS vs. Core**
- **On vs. Off for “Fully Integrated” Systems**
- **Transition from ICS/CLS to organic support**



POM 2014-2018 SNaP Data for Software Maintenance

Service	2010	2011	2012	2013	2014	2015	2016	2017	2018
Army	825,570	666,892	1,202,921	1,214,566	1,322,896	1,356,692	1,394,858	1,369,367	1,413,537
Organic	188,428	99,540	274,554	227,174	225,554	224,998	238,049	241,003	248,394
Contract	637,142	567,352	928,367	987,392	1,097,342	1,131,694	1,156,809	1,128,364	1,165,143
Navy	259,139	280,551	229,227	205,921	204,991	149,685	164,567	167,303	170,097
Organic	150,464	162,896	127,311	134,599	138,023	91,359	102,390	103,278	108,634
Contract	108,675	117,655	101,916	71,322	66,968	58,326	62,177	64,025	61,463
Air Force	1,175,226	1,230,841	1,334,013	1,464,254	1,653,217	1,812,991	1,820,594	1,886,637	1,853,351
Organic	244,489	256,059	255,009	260,347	326,366	332,361	362,882	378,436	364,486
Contract	930,737	974,782	1,079,004	1,203,907	1,326,851	1,480,630	1,457,712	1,508,201	1,488,865
DOD Total	2,328,267	2,260,691	2,832,382	2,948,810	3,242,019	3,383,011	3,445,165	3,489,445	3,436,985
Organic	583,380	518,495	656,874	622,120	689,943	648,718	703,321	722,717	721,514
Contract	1,676,555	1,659,789	2,109,287	2,262,621	2,491,161	2,670,650	2,676,698	2,700,590	2,715,471