Tools Table

This table includes tools from across the handbook. Note that this table should not be considered all-inclusive, nor is it an endorsement of any particular tool. **Check with your Center to see what tools are available to facilitate compliance with requirements in NPR 7150.2.** If you would like to suggest a tool to be added to this list, please add a comment at the very bottom. Thanks!

add new tool

Tool name	Type	Copyright or Source	Link	Description	User	Affiliated SWE
AccuRev®	COTS	AccuRev®	http://www.accurev.com/accurev.html ...	Configuration management, source control	JPL, KSC	[SWE-080]

Action Item Tracking Tool	Downloadable	GSFC	https://nen.nasa.gov/web/software/nasa-software-process-asset-library-pal/pal-webconnectorWAR/action	Excel spreadsheet that tracks action items and produces a summary report. Attributes tracked for each action item include ID, Action Item, Assigned To, Priority, Date Opened, Date Due, Date Closed, Days Opened, and Notes.	GSFC	SWE-090, SWE-091
AD hoc Workflows	COTS	Comala Technology Solutions	http://www.adhocworkflows.com/display/WWW/Home	Ad hoc Workflows helps organizations specify workflows to gain dependable, repeatable and compliant processes.	GRC	SWE-005
Agency Process Asset Library PAL	Process Asset Library	NASA Office of the Chief Engineer	https://nen.nasa.gov/web/software/nasa-software-process-asset-library-pal	The NASA Agency software engineering Process Asset Library (Agency PAL) is a resource for the software engineering community that is funded by the NASA Headquarters Office of the Chief Engineer (OCE).	All Centers	SWE-098, SWE-099

Altium®	COTS	Altium Limited	http://www.altium.com/design.	"Design the physical board, the programmable hardware on the board and the system software, all within a single design application. "	DFRC, KSC	SWE-056
ARM	Unknown		http://satc.gsfc.nasa.gov/tools/arm/ ...		GSFC	SWE-053, SWE-109
Astree	COTS	AbsInt	http://www.absint.com/astree/index.htm ...	A static program analyzer for a restricted set of C programs, (no dynamic memory allocation and recursion). It was started as a research tool by Patrick and Radhia Cousot, and their research group, and is now commercialized by AbsInt.	TBD	SWE-135
Audit Findings and Corrective Actions Tool	Downloadable	GSFC	http://software.gsfc.nasa.gov/tools/AuditFindingsandCorrectiveActionsToolV2080905.xls ...	Excel spreadsheet	GSFC	SWE-084
Bamboo®	COTS	Atlassian	http://www.atlassian.com/software/bamboo/ ...	A continuous integration server	ARC	SWE-135
Baselines Tool	Downloadable		http://software.gsfc.nasa.gov/toolsDetail.cfm?selTool=3.1.1.1.3 ...	GSFC	GSFC	SWE-082

Bugzilla	Open Source	Bugzilla	http://www.bugzilla.org/	Bug tracking	ARC, GSFC	SWE-024, SWE-025, SWE-060, SWE-069, SWE-080, SWE-083, SWE-088

C-Kit	Academic	Bell Labs	http://www.smlnj.org/ftp/ckit/index.html ...	C front end written in SML that translates C source code (after preprocessing) into abstract syntax represented as a set of SML datatypes. It also provides facilities for extending the C language with additional syntactic constructs, which can be useful for implementing "C-like" domain-specific languages as well as C dialects. Ckit is currently used as the front end for a variety of tools for static analysis of C code and at least one domain-specific language. The development has stopped because the researchers involved have left Bell Labs.	TBD	SWE-135

Caliber®	COTS	Borland®	http://www.borland.com/products/caliber/ ...	CaliberRM® is a requirements management tool that ensures that applications meet end user needs. Using CaliberRM, analysts, developers, testers and other stakeholders accurately capture and communicate the user's requirements throughout the application lifecycle.		SWE-072, SWE-052, SWE-059, SWE-064

Calysto	Academic	Domagoj Babic	http://www.domagoj.com/index.php/Research/Projects/Calysto ...	Calysto is a scalable and precise static checker for general purpose code, which checks pointer properties and user provided assertions. Calysto works on the SSA form, and as such is language independent. However, interpretation of library functions (like C-lib and STL) as well as trace reporting is language-dependent (for instance, demangling C++ and Java names). Currently, trace reports are readable only for languages that do not mangle names (like C). Dr. Babic considers Calysto a bug hunting companion, rather than a formal verification tool.	TBD	SWE-135

CGS	NASA	NASA - ARC	http://ti.arc.nasa.gov/tech/dase/vandv/cgs/ ...	C Global Surveyor. An experimental tool at NASA Ames Research Center from Guillaume Brat and Arnaud Venet, based on abstract interpretation techniques, inspired by Patrick Cousot. This is obsolete and superseeded by the work on IKOS, a framework to generate of static analyzers based on abstract interpretation.	ARC, JPL	SWE-135

CheckStyle	Open Source	SourceForge	http://checkstyle.sourceforge.net/ ...	Checkstyle is a development tool to help programmers write Java code that adheres to a coding standard. It automates the process of checking Java code to spare humans of this boring (but important) task. This makes it ideal for projects that want to enforce a coding standard.	KSC	SWE-060, SWE-061, SWE-135
Clang Static Analyzer	Academic	LLVM	http://clang-analyzer.llvm.org/index.html ...	A source code analysis tool that find bugs in C and Objective-C programs. Currently it can be run either as a standalone tool or within Xcode. The standalone tool is invoked from the command-line, and is intended to be run in tandem with a build of a codebase.	TBD	SWE-135

COCOMO™ II	Freeware	USC	http://sunset.usc.edu/research/COCOMOII/COCOMOmain.html ...	Constructive Cost Model II (COCOMO™ II) is a model that allows one to estimate the cost, effort, and schedule when planning a new software development activity. It consists of three submodels, each one offering increased fidelity the further along one is in the project planning and design process. Listed in increasing fidelity, these submodels are called the Applications Composition, Early Design, and Post-architecture models.		SWE-015, Topic 7.6

CodeHawk	COTS	Kestrel Technology	Note: All links for this company seem to be down. Trying to verify if the company still exists.	A tunable static source code analyzer. CodeHawk uses a semantic analysis based on Abstract Interpretation technology to calculate invariants at relevant code locations for the targeted vulnerability. CodeHawk can perform analysis with no input but the code itself. It can also be customized for code architectures and tuned based on feedback.	ARC	SWE-060, SWE-061, SWE-087, SWE-135
CodeSonar®	COTS	Grammatech	http://www.grammatech.com/products/codesonar/overview.html ...	CodeSonar® is a sophisticated source code analysis tool for C/C++ that can detect bugs in critical embedded code that other tools miss.	IV&V, ARC (NanoSat), JPL	SWE-087, SWE-091, SWE-135

Codesurfer®	COTS	Grammatech	http://www.grammatech.com/products/codesurfer/overview.html ...	A code browser that understands pointers, indirect function calls, and whole-program effects.	IV&V	SWE-135

Confluence®	Team collaboration software	Atlassian	https://www.atlassian.com/software/confluence/...	"Capture the knowledge that's too often lost in email inboxes and shared network drives in Confluence where it's easy to find and update.Distribute a clear agenda before, take notes during, and assign tasks afterward. With all your notes and action items in one place you can give email a break.Great products require even better planning. Document, discuss, and track product requirements so your developers can hit the ground running.Extend Confluence to fit your needs with custom themes, diagramming tools, workflow management solutions, [etc]..."	GRC	This Software Engineering wiki.

Coverity® Prevent and Extend™	COTS	Coverity®	http://coverity.com	Static code analysis	JPL, IV&V	SWE-060, SWE-061, SWE-087, SWE-091, SWE-135
Cruise Control™	Open Source	Cruise Control™	http://cruisecontrol.sourceforge.net/ ...	CruiseControl™ is both a continuous integration tool and an extensible framework for creating a custom continuous build process.	ARC	SWE-135, SWE-136
Dimensions® RM	COTS	Serena Software, Inc.	http://www.serena.com/...	Requirements management software		SWE-072, SWE-052, SWE-059, SWE-064
DOORS®	COTS	IBM® Rational®	http://www-01.ibm.com/software/awdtools/doors/...	IBM® Rational® DOORS® is a requirements management tool that helps increase quality , improve requirements communication, collaboration, and verification across the enterprise.	ARC, DFRC, GRC, GSFC, IV&V, JPL, JSC, JSC, LaRC, MSFC,	SWE-049, SWE-050, SWE-051, SWE-052, SWE-059, SWE-053, SWE-064, SWE-072, SWE-091, SWE-109

Eclipse IDE	Open Source	Eclipse Foundation	http://www.eclipse.org/downloads/ ...	An integrated design environment (IDE) tool for software development. Eclipse is an open source community, whose projects are focused on building an open development platform comprised of extensible frameworks, tools and runtimes for building, deploying and managing software across the lifecycle.	JPL	SWE-060, SWE-061
Enterprise Architect	COTS	Sparx Systems, Inc.	http://www.sparxsystems.com/ ...	Enterprise Architect provides complete traceability from requirements, analysis and design models, through to implementation and deployment. ...	IV&V	SWE-049, SWE-051, SWE-135

eRoom	COTS	EMC Corporation	http://www.emc.com/products/detail/software2/emc-eroom.htm ...	eRoom is an on-line project collaboration, or collaborative software product from EMC Corporation. Originally developed by eRoom Technology Inc., of Cambridge, Massachusetts, product features include e-mail management, calendaring, instant messaging, project plans, databases, and document management.	GRC	SWE-088
FindBugs	Open Source	University of Maryland	http://findbugs.sourceforge.net ...	Static analysis tool used for detecting bugs in JAVA programs. This is an open source tool.	GRC (EVA Sim; EVA-Informatics), ARC, JPL, KSC	SWE-060, SWE-061, SWE-087, SWE-135

Flexelint	COTS	Gimpel Software	http://www.gimpel.com/html/flex.htm ...	Flexelint are powerful static analysis tools that will check your C/C++ source code and find bugs, glitches, inconsistencies, non-portable constructs, redundant code, and much more. It looks across multiple modules, and so, enjoys a perspective your compiler does not have.	IV&V	SWE-087, SWE-135
FxCop	Open Source	MicroSoft	http://msdn.microsoft.com/en-us/library/bb429476(vs.80%29.aspx ...	FxCop is an application that analyzes managed code assemblies (code that targets the .NET Framework common language runtime) and reports information about the assemblies, such as possible design, localization, performance, and security improvements.		SWE-061

GRC eRoom Inspection Tool	Downloadable	GRC	kevin.r.carmichael@nasa.gov ...	Provides users with a means of recording various software inspection measures and automatically calculates various inspection metrics, e.g., defect counts. Different versions of the metrics reports are generated automatically for project-, Center-, and Agency-level reporting.	GRC	
GSFC Requirements Matrix Tool	Downloadable	GSFC	https://docs-nen.nasa.gov/cloudrepo/davXSLTfg/davXSLTCfg.FileFolder.spreadsheet?b=1c26e35f-0cef-4f20 .	This tool, an Excel spreadsheet, provides bidirectional traceability between requirements, design, code, and test procedures.	GSFC	SWE-052, SWE-064

GUESS	Open Source	Sourceforge	http://graphexploration.sourceforge.org/ ...	GUESS is an exploratory data analysis and visualization tool for graphs and networks. The system contains a domain-specific embedded language called Gython (an extension of Python, or more specifically Jython) which supports the operators and syntactic sugar necessary for working on graph structures in an intuitive manner. GUESS also offers a visualization front end.	IV&V	SWE-051

HP Quick Test Professional	COTS	HP	http://www8.hp.com/us/en/software-solutions/software.html?compURI=1175057&pid=hprr1002usenfr#.UU..	Now called HP Unified Functional Testing. software. This product accelerates automated software testing for both GUI and API applications, and also validates integrated test scenarios for hybrid composite applications. Simplified test design and maintenance result in reduced risk and improved quality for all your modern applications. HP Unified Functional Testing includes HP QuickTest Professional (QTP) and HP Service Test software.	ARC	SWE-114

Hudson	COTS	Oracle	http://hudson-ci.org/	Hudson is a continuous integration (CI) tool written in Java, which runs in a servlet container, such as Apache Tomcat or the GlassFish application server. It supports SCM tools including CVS, Subversion, Git and Clearcase and can execute Apache Ant and Apache Maven based projects.	ARC	SWE-135
IBM Rational Synergy	COTS	IBM Rational	http://www-01.ibm.com/software/awdtools/synergy/	"a task based integrated configuration management solution for global software development. " (NOTE: Briefing states that JSC R2S access for license is required.)	IV&V JSC ?	SWE-080, SWE-083, SWE-085
IBM Rhapsody	COTS	IBM Rational	http://www-01.ibm.com/software/awdtools/rhapsody/	"IBM® Rational® Rhapsody® family provides collaborative design and development	IV&V GSFC ?	SWE-051, SWE-055, SWE-056, SWE-057, SWE-058, SWE-112

				for systems engineers and software developers creating real-time or embedded systems and software. Rational Rhapsody helps diverse teams collaborate to understand and elaborate requirements, abstract complexity visually using industry standard languages (UML, SysML, AUTOSAR, DoDAF, MODAF, UPDM), validate functionality early in development, and automate delivery of innovative, high quality products." (NOTE: Several versions are listed on the website for architecture, system engineering requirements analysis, design and model management, simulations to validate		

				requirements and analyze architecture, and code generation. Unsure which versions are used within NASA. Listed requirements are those related to these topics.)		
IKOS	Academic	Carnegie Mellon University	http://www.cmu.edu/silicon-valley/software-systems-management/software-verification.html ...	Inference Kernel of Open Static Analyzers. A framework to generate of static analyzers based on abstract interpretation.	ARC	SWE-135

Inspections Dashboard Tool	Downloadable	Fraunhofer Center, University of Maryland	mailto:fshull@fc-md.umd.edu ...	A research project prototype developed by a team lead by Dr. Forrest Shull that provides data collection forms in which software measures can be recorded. The tool also provides some feedback about key planning parameters by comparing new inspections to local baselines and heuristics developed from data across the Agency.	University of Maryland	

Interactive Classification Tool	Software Classification Tool	NASA GRC	{tablink:7.2 - Classification Tool and Safety Critical Assessment Tool|3}	The software classification tool is a question and answer based guide that has been built in order to help identify the most likely software classification based on the answers that one provides to each question. This tool is only an additional resource to help determine a system or sub-systems classification and is not meant to be an authoritative member of software classifications .	All Centers	[SWE-020]

JIRA	COTS	Atlassian	http://www.atlassian.com/software/jira ...	JIRA provides issue tracking and project tracking for software development teams to improve code quality and the speed of development. It combines a clean, fast interface for capturing and organizing issues with customizable workflows, OpenSocial dashboards, and a pluggable integration framework. You can start with Atlassian software for $10. JIRA is used for issue tracking and project management by over 14,500 organizations.	GRC, JPL, GSFC, ARC	SWE-024, SWE-025, SWE-069, SWE-080, SWE-083, SWE-088, SWE-091, SWE-092, SWE-093, SWE-094, SWE-095, SWE-096, SWE-117
JPL C Coding Standard		JPL	http://lars-lab.jpl.nasa.gov/JPLCodingStandard.pdf	An example of a coding standard for programming in c	JPL	SWE-060, SWE-061, SWE-087

KlocWork Insight	COTS	Klocwork Software	http://www.klocwork.com/products/insight/?sourcefeature ...	A proven and widely deployed development productivity solution, Klocwork Insight enables early detection of a wide range of critical coding issues. With Klocwork Insight, software developers can run powerful static analysis at their desktop, and team leads and architects can access architecture visualization as well as important build-level metrics and trending data.	KSC (Launch Control System), ARC, JPL, IV&V	SWE-135

LaRC Peer Review Toolkit	Downloadable	LaRC	https://docs-nen.nasa.gov/cloudrepo/file/55195063-574-1-4036-8c1d-8045e2e93d15/LARCTL20120821instructio ...	Excel workbook that provides instructions for conducting a peer review, an overview of the peer review process, and product-specific checklists used during reviews. Areas for documenting issues and concerns, assigning action items, tracking issues to resolution, and documenting metrics are included.	LaRC	SWE-088, SWE-089, Topic 7.10
LDRA	COTS	Liverpool Data Research Associates	http://www.ldra.com/	Liverpool Data Research Associates (LDRA) is a provider of software analysis, test and requirements traceability tools for the Public and Private sectors and a pioneer in static and dynamic software analysis.	LaRC (CLARREO), JSC	SWE-135

Lint	COTS	Gimpel Software	http://www.gimpel.com/html/index.htm ...	Also PC-Lint and FlexeLint. It will thoroughly check your C/C++ source code for bugs, glitches, inconsistencies, non-portable constructs, and much more, so you can find and fix your bugs more quickly, and more economically, than with traditional debugging procedures	LaRC, ARC	SWE-087, SWE-135

Lint Plus	COTS	Cleanscape	http://legacy.cleanscape.net/products/lintplus/index.html ...	From the website: "Cleanscape LintPlus is a static source code analysis tool for ANSI C that reduces your organizational exposure to risks from latent software problems by automatically identifying problems at their source -- in the C source code prior to compiling or executing programs. From its first use, this venerable C source code analysis tool can save you hundreds of hours in code debugging, greatly reducing resources required for C testing efforts."	TBD	SWE-135
MagicDraw	COTS	No Magic, Inc.	https://www.magicdraw.com/ ...	UML business process, architecture, software and system modeling tool with teamwork support.	IV&V, JPL, GRC	SWE-111
MAS	Custom	POC: Matt		Objective:	ARC	SWE-118,

	software	Sharpe, Alex Eiser, Bill Van Dalsem (all from Ames)	https://nsckn.nasa.gov/Login.aspx?ACTION=LoginEmailAuser=OOturnUrl=https%3a%2f%2fnsckn.nasa.gov%2fSWS%2 ...	System to enable Ames' software management processes. Notes: "Living" and historical databases of all of Ames' software projects; enables online recommendation, review, and approval of software classifications (engineering and S&MA assurance/safety); repository for detailed software project data needed to support the Ames software engineering management processes. NPR 7150.2A records retention requirements and NASA Software Inventory. For more information, see the presentation given by Ames at the March, 2011, NASA SWG Face-to-Face (slides 9-13), available from the NSCKN		SWE-065, SWE-021

				site (Click the link to the left and log into NSCKN)		
Matlab	COTS	Mathworks	http://www.mathworks.com/products/matlab/	MATLAB® is a high-level language and interactive environment that enables you to perform computationally intensive tasks faster than with traditional programming languages such as C, C++, and Fortran.	ARC, DFRC, GRC, GSFC, IV&V, JPL, MSFC, WFF, JSC, LaRC, SSC, KSC	SWE-060, SWE-135

Measurement Planning Table Tool	Downloadable	GSFC	https://nen.nasa.gov/software/nasa-software-asset-library-page?pid=webconnectorWARwebclo	Provides a template for both development and acquisition projects for specifying the measures that should be collected over the project life cycle. For each measurement area (e.g., Software Quality), the template provides suggestions for the measurement objectives, the measurements that should be collected, the collection frequency, and the analysis that should be performed.	GSFC	SWE-090, SWE-091, Topic 7.14
MinGW	Open Source	MinGW	http://www.mingw.org/	MinGW, a contraction of "Minimalist GNU for Windows", is a minimalist development environment for native Microsoft Windows applications.	IV&V	SWE-051

MKS Integrity	COTS	MKS	http://www.mks.com/solutions/our-product ...	MKS Integrity is a systems and software lifecycle management (SSLM) and application lifecycle management (ALM) platform used for Process automation and workflow management	IV&V, GSFC	SWE-049, SWE-051, SWE-052, SWE-053, SWE-059, SWE-072, SWE-085

mygcc	Academic	Nick Volanski	http://mygcc.free.fr/	An extensible version of gcc (the GNU C compiler), that can be customized by adding user-defined checks for detecting for example memory leaks, unreleased locks, or null pointer dereferences. User-defined checks are performed in addition to normal compilation, and may result in additional warning messages. Mygcc allows programmers to add their own checks that take into account syntax, control flow, and data flow information.	TBD	SWE-135

ODASA	COTS	Semmle	http://semmle.com/	ODASA allows managers who are responsible for a team of software developers to: • understand progress in development projects • spot decreasing code quality before it becomes a problem • enforce quality standards across your development teams • avoid the recurrence of common defects	TBD	
OmniPlan	COTS	The Omni Group	http://www.omnigroup.com/products/omniplan/	OmniPlan provides features like Gantt charts, schedules, summaries, milestones, and critical path highlighting	ARC	SWE-016, SWE-025, SWE-046
Orion	Academic	Bell Labs	http://orion.research.bell-labs.com ...	Work in progress on an extension of Uno for C++, based on gcc.	TBD	SWE-135

PMD	Open Source	PMD	http://sourceforge.net/projects/pmd/ ...	PMD is a static ruleset based Java source code analyzer that identifies potential problems like: Possible bugs - Empty try/catch/finally/switch blocks, Dead code - Unused local variables, parameters and private methods, and so on.	KSC	SWE-087, SWE-135
Point Counting Tool	Microsoft Excel - Work Progress Tool	GSFC	https://nen.nasa.gov/web/software/nasa-software-process-asset-library-pal?ppid=webconnectorWARwebcon ...	This is a work progress tool.	GSFC	Topic 7.14

PolySpace	COTS	MathWorks	http://www.mathworks.com/products/polyspace/index.html ...	Polyspace code verifiers detect and prove the absence of overflow, divide-by-zero, out-of-bounds array access and other run-time errors in source code. Polyspace uses static code analysis that is formal methods based (with abstract interpretation) to verify C/C++ or Ada. Polyspace can also be used to check compliance to coding standards, review code complexity metrics, and measure software quality.	ARC	SWE-087, SWE-135
Primavera	COTS	Oracle	http://www.oracle.com/primavera ...	Primavera Project Manager is a critical path method (CPM) scheduling tool that is as part of a Project Portfolio Management software package.		SWE-016, SWE-025, SWE-046

Problem Report Tool	Downloadable	GSFC	http://software.gsfc.nasa.gov/toolsDetail.cfm?sID=2.5.2.3 ...	v1.0 Excel-based problem report management and metrics tool, GSFC	GSFC	SWE-069, SWE-080, SWE-082, SWE-090, SWE-091
Purify	COTS	IBM Rational	http://www-01.ibm.com/software/awdtools/purify/	Rational® Purify® is a dynamic software analysis tool designed to help developers write more reliable code. It includes two capabilities: 1) Memory debugging (pinpoints hard to find memory errors such as uninitialized memory access, buffer overflow and improper freeing of memory), 2) Memory leak detection (identifies memory blocks that no longer have a valid pointer). Purify is supported on Windows®, Linux®, Solaris®, and AIX®.	LaRC,JPL	SWE-060, SWE-061, SWE-135

QAC	COTS	Phaedrus Systems	http://www.phaedsys.com/principals/programming-research/index.html ...	Proprietary language parsing engines to statically analyze your source code. They identify problems caused by language usage that's dangerous, overly complex, non-portable, or difficult to maintain. Plus, they include the basic building blocks for coding standard enforcement.	JPL	SWE-087, SWE-135
Rational Clearcase	COTS	IBM Rational	http://www-01.ibm.com/software/awdtools/clearcase/	An industry-leading solution that provides sophisticated version control, workspace management, parallel development support and build auditing to improve productivity.	IV&V, JSC	SWE-135

Rational Clearquest	COTS	IBM Rational	http://www-01.ibm.com/software/awdtools/clearquest/ .	IBM® Rational® ClearQuest® is a bug tracking system that provides flexible defect and change tracking, process automation, reporting and lifecycle traceability for better visibility and control of the development lifecycle	IV&V, JSC	SWE-051, SWE-088, SWE-135
Rational Suite for Technical Developers	COTS	IBM Rational	http://www-01.ibm.com/software/awdtools/suitefortechnical/ ...	Rational Suite for Technical Developers provides complete cross-functional support through product integrations and workflow to optimize real-time and embedded development.	IV&V, GSFC	SWE-135

RCAT	NASA Owned	NASA NSC	http://nsc.nasa.gov/RCAT/ ..	The NASA Root Cause Analysis Tool (RCAT) is designed to facilitate the analysis of anomalies, close calls, and accidents and the identification of appropriate corrective actions to prevent recurrence. The RCAT software provides a quick, easy, accurate, and repeatable method to perform and document root cause analysis, identify corrective actions, perform trending, and generate data usable in precursor analysis and probabilistic risk assessment.	IV&V	SWE-135

Requirements Metrics Tool	Downloadable	GSFC	https://nen.nasa.gov/web/software/nasa-software-process-asset-library-pal/metrics-webconnectorWAR/spread	The requirements metrics spreadsheet is used to track both functionality (via the number of requirements representing the scope of the system) and requirements volatility (by tracking changes to requirements). It has three tabs for input data and calculations, and four tabs for graphs of said data. The inputs are project information that helps set up the spreadsheets, data allocating requirements to build and CSCI, and a timeline of requirements changes that tracks the evolving number of requirements and requirements changes by CSCI.	GSFC	SWE-090, SWE-091

Requirements traceability tool	Downloadable	GSFC	http://software.gsfc.nasa.gov/tools/Requirements_Tool080905.xls ...	This tool, an Excel spreadsheet, provides bidirectional traceability between requirements, design, code, and test procedures. For a list of features, see the tools section of the GSFC PAL. Note: You must be on site at Goddard in order to access this file.	GSFC	SWE-072, SWE-052, SWE-059, SWE-064

RequirementsLink	COTS	ENSER/Parametric Technology Corporation (PTC)	http://www.ptc.com/appserver/wcms/relnotes/relnotes.jsp?dbkey=826imdbkey=11829 ...	Windchill Requirementsl Link Requirements capture and tracking tool. Windchill Requirement sLink - an integral option for Windchill PDMLink - lets you manage product requirements, including change control and associating requirements with specific product structures and design content. With bi-directional traceability between customer needs, market requirements and the underlying technical requirements, you can ensure that customer and market requirements are satisfied by designs, and properly verified during development.	SSC	SWE-049, SWE-050, SWE-051, SWE-052, SWE-053, SWE-059, SWE-072, SWE-091, SWE-109

Requisite Pro	COTS	IBM Rational	http://www-01.ibm.com/software/awdtools/reqpro/	Rational RequisitePro helps project teams to manage their requirements, to write good use cases, to improve traceability, to strengthen collaboration, to reduce project rework, and to increase quality.	KSC	SWE-072, SWE-052, SWE-059, SWE-064
Risk Management Tool	Downloadable	GSFC	https://nen.nasa.gov/software/nasa-software-process-asset-library-pal/projectsWebconnectorWAR/	Provides a means for projects to specify and monitor risks. It supports up to 30 risks. Information tracked includes the statement of the risk, originator, date identified, probability, impact, timeframe, assignee, visibility, source, and mitigation steps. This Tool generates detail and summary reports.	GSFC	SWE-090, SWE-091

SATERN	Training	NASA	https://satern.nasa.gov/Etomcontent/splashpage/SATERNSplash.html	SATERN is the Agency's primary tool for the managing of training of the employees. SATERN allows the scheduling, evaluation, and tracking of training associated with each employee.	All Centers	SWE-005, SWE-017, SWE-100, SWE-101, SWE-107, SWE-108
Saturn	Academic	Alex Aiken-Stanford University	http://saturn.stanford.edu/index.html ...	The goal of the Saturn project is to statically and automatically verify properties of large (meaning multi-million line) software systems. The focus of the work is simultaneously achieving scalability, precision, and a straightforward way of expressing analyses that is easy to reason about.	TBD	SWE-135

SCRUBJPL	JPL Owned	JPL	http://www.techbriefs.com/component/content/article/51 ...	SCRUB is a code review tool that supports both large, team-based software development efforts (e.g., for mission software) as well as individual tasks.	JPL	SWE-087, F2F
SEER SEM	COTS	Galorath	http://www.galorathsoftw...	Software Evaluation and Estimation of Resources - Software Estimating Model. A cost estimating tool. NASA has an agency wide license. SEER for Software enables organizations to streamline project processes and improve project performance throughout the software development lifecycle.	NASA	SWE-015, Topic 7.6
Selenium	Open Source	N/A	http://seleniumhq.org/	"Selenium is set of different software tools each with a different approach to supporting test automation...	ARC	SWE-114

				The entire suite of tools results in a rich set of testing functions specifically geared to the needs of testing of web applications of all types. These operations are highly flexible, allowing many options for locating UI elements and comparing expected test results against actual application behavior. One of Selenium's key features is the support for executing one's tests on multiple browser platforms." (from Selenium website) Selenium supports interactive webpage testing. It allows you to write test scripts that work on dynamic running web applications, as well as being able to automate,		

				and run the tests periodically on demand. It is also a useful automation or scripting tool. Selenium allows recording of complex web application configurations for replay and repeatability. (from Ames)		
Semmle ODASA	COTS	Semmle	http://semmle.com/technology/analyse-software-assets/ ...	Semmle's ODASA (On-Demand Analytics of Software Assets) gives you a unified view of your software projects, with drill-down to as much detail as you need - even to the source code. The beauty of this unified view is that it is comprehensive, objective, and gives you all the information that you need, and nothing that you don't need.	JPL	SWE-135

Simics 4.4	COTS	Wind River	http://www.windriver.com/products/simics/ ...	"Wind River Simics is a full system simulator used by software developers to simulate any target hardware from a single processor to large, complex, and connected electronic systems. This simulation enables the target software (board support package, firmware, real-time operating system, middleware, and application) to run on a virtual platform the same way it does on the physical hardware."	IV&V Centers ?, JSC	SWE-028, SWE-029
SIMS	NASA Owned	OCE/JPL	https://sims.jpl.nasa.gov/	Database tool used to support the Agency wide Inventory for software classes A-E	All Centers	SWE-006

Simulink	COTS	MathWorks	http://www.mathworks.com/products/simulink/	Simulink® is an environment for multidomain simulation and Model-Based Design for dynamic and embedded systems. It provides an interactive graphical environment and a customizable set of block libraries that let you design, simulate, implement, and test a variety of time-varying systems, including communications, controls, signal processing, video processing, and image processing.	IV&V, Stennis, GSFC, ARC, GRC, JPL, MSFC, KSC, JSC	SWE-056, SWE-060, SWE-111, SWE-135
Software Cost Analysis Tool (SCAT)	MS Excel	NASA	https://nen.nasa.gov/web/software/nasa-software-process-asset-library-pal?ppid=webconnectorWARwebcon	Software Costing Tool - A probabilistic version of COCOMO II.		SWE-015
Software Test Report Template	Template	Glenn Research Center	https://nen.nasa.gov/web/software/nasa-software-process-asset-library-pal?ppid=webconnectorWARwebcon ...			SWE-030

Software Verification and Validation Plan (SVVP) Template	template	Texas State University Computer Science Department	http://www.cs.txstate.edu/~ts55/SVVPLAN.pdf	(based on IEEE standards)		SWE-030
Source Lines Counter (SLiC)	Downloadable	JPL	https://nen.nasa.gov/software/nasa-software-exchange-asset-library-pal?ppid=webconnectorWARwebcon ...	a code counter	JPL	SWE-015
Staffing Tool	Downloadable (for Excel 2007 only)	GSFC	https://nen.nasa.gov/software/nasa-software-exchange-asset-library-pal?ppid=webconnectorWARwebcon ...	This tool is used to plan staffing resources and track actual and projected effort against the plan. This tool is also used to plan procurement costs and track actual expenditures against the plan.	GSFC	SWE-090, SWE-091
StyleCop	Open Source	Open Source	http://stylecop.codeplex.com/releases/view/48028	StyleCop analyzes C+ source code to enforce a set of style and consistency rules. It can be run from inside of Visual Studio or integrated into an MSBuild project.		SWE-061

TBvision	COTS	Semmle	http://semmle.com/	TBvision provides transparency into source code, enabling managers, teams and developers to better monitor testing, quality metrics, memory errors and security vulnerabilities. The LDRA tool suite provides a comprehensive C and C++ coding standards enforcement.	TBD	
Together	COTS	Borland	http://www.borland.com/products/together/	Together® is a modeling platform that gives enterprise teams leading-edge design capabilities which enable the visualization and continued maintenance of IT architectures.	IV&V	SWE-051,SWE-056,SWE-111
Trac	Issue tracking	Edgewall Software	http://trac.edgewall.org/	Trac is an enhanced wiki and issue tracking system for software development projects	ARC	SWE-024, SWE-088

UML Version 2.4.1	Open Source	Object Management Group, Inc	http://www.omg.org/spec/UML?2.4.1/ ...	Unified Modeling Language (UML) is a standardized general-purpose modeling language in the field of object-oriented software engineering. UML is used to specify, visualize, modify, construct and document the artifacts of an object-oriented software-intensive system under development.		SWE-057, SWE-058
Understand	COTS	Scientific Toolworks, Inc.	http://www.scitools.com/	Understand is a static analysis tool for maintaining, measuring, & analyzing critical or large code bases.	IV&V	SWE-051, SWE-087
UNO	JPL Owned	JPL	http://spinroot.com/uno/	JPL Static code analysis (C language)	JPL	SWE-135

Vault	Academic	MicroSoft	http://research.microsoft.com/en-us/people/mak/	An experimental system, in development at MicroSoft by Rob DeLine and Manuel Fahndrich. It is based on formal annotations placed in the code.	TBD	SWE-135
Vital Link	COTS	Compliance Automation, Inc.	http://www.complianceautomation.com/ ...	Requirements Experts specializes in requirement gathering, requirement writing, and requirement management to help you acquire and develop winning products and systems.		SWE-072, SWE-052, SWE-059, SWE-064

Windchill FTA (formerly RELEX)	COTS	PTC	http://www.ptc.com/products/windchill/fta ...	By helping you construct a graphical representation of the critical issue and its contributing events, Windchill FTA (formerly Relex Fault Tree) provides the analysis tools required to help mitigate its occurrence or impact. The powerful analytical capabilities of Windchill FTA quantify system risk and reliability, helping you make targeted decisions about design, maintenance, and controls to reduce the probability of failures.	IV&V, KSC	SWE-135

WindRiver Workbench 3.2	COTS	Wind River	http://www.windriver.com/products/workbench/	"Based on the Eclipse platform, Wind River Workbench is a collection of tools that accelerates time-to-market for developers building devices with VxWorks and Wind River Linux. Through tight integration with the industry's leading RTOS and the leading device Linux distribution, Workbench offers the only end-to-end, open standards-based collection of tools for device software design, development, debugging, test, and management."	IV&V Centers?, ARC (no version noted)	SWE-028, SWE-062

WinMerge	Open Source		http://winmerge.org/	"WinMerge is an Open Source differencing and merging tool for Windows. WinMerge can compare both folders and files, presenting differences in a visual text format that is easy to understand and handle."	IV&V	SWE-051