CMTrends

News and Perspectives for CM Professionals

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"Effectivity"

by **Steve Easterbrook**
CMPIC LLC

This was the second year of the CM Trends Conference (August, 2016) that we included a workshop entitled: "Standardizing Configuration Management Terminology: Is it Possible?" We thought readers of "CM Trends" might find this interesting.

Why? Because CM terminology has taken on various meanings over the years and CM Professionals need to be aware of these differences.

This workshop reviewed the term "effectivity" to determine how it is currently being defined and utilized in various environments. Conference participants discussed the various organizational definitions associated with this term and a determination was made as to the feasibility of reaching a universally accepted definition for this CM term.

Background

The term "effectivity" is not in any brand-name dictionary and your spell checker will flag it as a typo. It also is not mentioned at all in most CM standards (as well as CM guidance documents). ISO 10007, IEEE 828, the CMMI do not even mention the word. However, when you look at an organization's change request form you almost always see an "effectivity" block that needs to be filled in. "Effectivity" is definitely misunderstood and the term means different things to different organizations. So what does "effectivity" really mean?

We asked the attendees to review the references provided below and answer the following workshop questions.

Workshop Questions

Question 1: Is there an "effectivity" block on your change form?

Participant's Response: 85% Yes, 15% No

Question 2: Does your definition match the original definitions?

Participant's Response: 50% Yes, 50% No

Note: original definitions stated "effectivity" included production serial numbers, lot number and other item identification ranges affected by the change, as well as items that needed to be retrofitted. See definitions below.

Question 3: If not, what is your definition? Why is your definition different from the original definition?

Participant's Response: The 50% use dates in their effectivity blocks. Why? They internally developed their own definitions, were taught different definitions of "effectivity", or recently adopted the SAE-EIA-649B definition.

Note: 649B includes production serial numbers, lot numbers and other item identification ranges affected by the change, as well as items that needed to be retrofitted, and also includes dates and events. See definitions below.

Question 4: Is it possible for the CM community to unanimously agree on a single definition for this term?

Participant's Response: No

Conclusion

Obviously, there were disagreements among participants. The major argument was about whether "effectivity" could be a date. Those who said no to "date effectivity", pointed out "effectivity" was always about "what", i.e. what would be "affected" by the change… not the date the change would take affect. And "the date the change would take affect" had many interpretations.

All agreed that "what was affected" and "when things will become effective" does need to be addressed for every task associated with a change.

Here is how it all pans out: in older standards effectivity was the "what" items would be "affected" (if the change was approved). The "what" was identified by serial numbers, lot numbers, hull numbers, tail numbers etc. Note: Maybe the term should have been "affectivity".

In newer standards the effectivity can be "what" or "when".

Regardless, I don't even need to use the term as long as my change requests identify the "what" as well as the "when".

Definitions for Effectivity

The Original Definition:

Canceled MIL-STD-480, Configuration Control-Engineering Changes, Deviations and Waivers

"Production effectivity by serial number"

"Enter the contractor's estimated production effectivity point for the production items, including serial number, or other item identification (e.g., block or lot number) as approved by the Government. Partial production installation of a change shall not be accomplished, unless specifically authorized by the Government. In determining the effectivity point for the proposed change, the contractor shall consider, in addition to the time factors, the availability of all support elements affected and the most economical point of introduction consistent with all the salient factors involved. The earliest production incorporation is not necessarily the singular or most important factor in the establishment of a proposed change affectivity point. The effectivity point will be based on concurrent availability of all logistics support elements and materials affected by the change to the item. Firm production effectivities should be indicated where the Government has so directed, or where the contractor has introduced a change into production, assuming related risks"

Canceled MIL-STD-973, "Configuration Management"

"Production effectivity by serial number"

"a. For hardware, enter the contractor's estimated production effectivity point for the production items including serial number, or other item identification (e.g., block or lot number) as approved by the Government...

"b. For CSCI'S, identify the CSCI version number into which the change will be incorporated. effectivity of the end item CI and vehicle (aircraft, tank, ship, etc.) into which the capability represented by the new version of the software is proposed to be incorporated, shall also be provided...

"Block 23a. Retrofit- Recommended item effectivity. When the contractor recommends that the engineering change be accomplished in accepted items by retrofit (see Block 43), the quantities and serial (or lot) numbers of accepted items in which the change will be incorporated by retrofit shall be entered in Block 23a, or in a referenced enclosure..."

Active Definition:

SAE International ANSI/EIA-649B, "Configuration Management"

"Effectivity - a designation, defining the product range; e.g., serial numbers, block numbers, batch numbers, lot numbers, model, dates or event, at which a specific product configuration applies, a change is to be or has been affected, or to which a variance applies."

Steve is the President of CMPIC LLC - the Configuration Management Process Improvement Center. Steve has been working in configuration management for over 30 years. He has 12 years of experience as a Configuration Management manager in government and commercial organizations and another 18 years as a CM educator, lead assessor, and consultant. Steve has taught, lectured to, and consulted with thousands of individuals from hundreds of commercial and government organizations on the subject of CM process improvement.

STEVE EASTERBROOK

"SAE EIA-649C Update"

by A. Larry Gurule

CMPIC LLC, i-Infusion, G-33 Vice Chair

As you may or may not know, at SAE International's G-33 Configuration Management Committee winter meeting, which was held in Mesa, AZ, they gave the go-ahead to initiate a project that will be used to field a new revision of SAE/EIA 649 Configuration Management Standard. The reason for this action is that the current standard, SAE EIA-649 Rev B, is in the fifth year of a five year revision cycle and is due for review according to SAE's operating standards.

At its last meeting, which was held in concert with CMPIC's Trends S.W.a.T event held in San Antonio, TX, the G33 committee discussed the timing of the project. The committee decided that a series of "sprints" should take place to address the various sections of the standard, as opposed to taking on the standard as a whole. The sprint duration for each section was set at 3 weeks. 649C project sponsor, Larry Gurule, provided a schedule for the "sprints" and is now in the process of holding them.

At the conclusion of each "sprint" the 649C committee is holding comment reviews and they are adjudicating the received comments and suggestions. The seventh and final sprint is scheduled to conclude the week of February 6th with comment adjudication taking place the week of February 13th - just in time for the next G33 meeting that will be held in San Francisco, CA the week of February 20th.

After the San Francisco meeting, the 649C committee will begin the task of revising 649B against the adjudicated comments and suggestion. The hope is to have a new revision of the standard balloted and published by the end of 2017.

If you are interested in participating in this project and are a current member of the G33 committee, please contact Mr. Gurule. His contact information can be found in the Roster tab of the SAE/G33 Committee site.

If you are not a member of the G33 and would like to participate in the historic project, please visit the G33 Configuration Management Committee site located at: http://www.sae.org/servlets/works/committeeHome.do?comtID=TEASSTCG33 and click on the link titled "Join the Committee.ppt". Once you have downloaded and completed the form, email it to SAE Staff Representative (a link to the SAE email address can also be found on the G33 committee page).

About the G33:

SAE International's G-33 Configuration Management Committee prepares positions on commercial and government policies, practices, specifications, and standards dealing with technical data, drawing practices, and configuration management practices. It promotes understanding of configuration and data management principles and develops standards. The committee provides innovative solutions and educational services through workshops and related publications. SAE/EIA-649B, Configuration Management Standard is one of the standards that are the responsibility of the G33. Others include:

SAE/EIA-649-1, CM Requirements for Defense Contracts; SAE/EIA-649-2, CM Requirements for NASA Enterprises; SAE/GEIAHB-649A, CM Standard Implementation Guide.

Larry Gurule is President of i-infusion, Inc. and a CMPIC Associate Instructor. Larry is an active SAE G33 Configuration Management committee member, Vice Chair of the SAE/SSTC/G33 Configuration Management Committee, and project sponsor for 649C revision. Larry is also an experienced consultant specializing in process and knowledge driven environments, including product development, engineering, manufacturing, supply chain, retail, distribution, and service/process industries. Larry has also owned and/or held senior level positions in manufacturing, software and service based businesses, as well as lectured to and/or consulted with hundreds of individuals from Fortune 500 companies and various government agencies on process improvement and enterprise IT implementation initiatives. Larry holds a Mechanical Engineering degree from the University of Colorado and is a CMPIC SME and CMII Certified Professional.

A. LARRY GURULE

CMTrends

2017 S.W.A.T.
Seminars, Workshops, And Training

You are Invited!

August 28 - 30, 2017 in Orlando, Florida
You are invited to attend and participate in **CM Trends 2017: Seminars, Workshops, and Training**!

CM Trends will help you to become better able to identify bottlenecks, improve workflow, and reduce mistakes within your organization. By attending CM Trends 2017, you will gain a better understanding of configuration management, including the latest CM topics, trends, industry standards, and corporate experiences. CM Trends does not restrict itself to lecturing about one methodology, but instead exposes you to the full spectrum of configuration management and process improvement through diverse presentations, hands-on workshops, question and answer sessions, talking with exhibitors, and networking.

This 2.5-day event is great for anyone responsible for configuration management or process improvement within his/her organization. All experience levels and backgrounds are welcome! CM Trends attracts an international array of attendees from both commercial and governmental organizations. CM Trends' diverse attendance is what makes this event great for networking and learning from other's experiences.

Learn more about CM Trends 2017 at: www.CMPIC.com/configuration-management-seminar
Register now: www.CMPIC.com/registration, 1-434-525-8648, info@cmpic.com

Discounted Post-Event Classes

August 30 - September 1, 2017 in Orlando, Florida

Every year CMPIC hosts discounted CM certification and training courses to celebrate a successful CM Trends event. These courses (typically $1275) will be offered at $995 to the public or only $800 in addition to your CM Trends 2016 registration. Register now to learn more about one of the following:

   Course 6, "SAE EIA-649B Principles & Applications" certification class
   Course 7, "Configuration Management Assessor" certification class
   Course 9, "CM Standards & Practices Update" refresher class

Learn more at: www.CMPIC.com/2017_CMTrends_Classes
Download our Justification Letter to attend.

Register Now

CMTrends

2017 S.W.A.T.

Seminars, Workshops, And Training

Location: Venue & Hotel

All CM Trends 2017 Seminars, Workshops, and Training classes will be held at:

ROSEN CENTRE HOTEL
9840 International Dr.
Orlando, Florida 32819
www.RosenCentre.com

The Rosen Centre Hotel is located on the famous International Drive, a quick walk to shopping, dining, and entertainment.

Room Rate: $114.00 (single/double) per night, available August 23 - September 5, 2017.
Make your sleeping room reservations soon. Room block typically fills up early. Email kerri@cmpic.com if you encounter any problems making your sleeping room reservation.

To reserve a sleeping room at this discounted group rate, please:
Call: 1-800-204-7234 & mention "CMPIC: CM Trends", *or*
Reserve Online: https://bookings.ihotelier.com/Rosen-Centre/bookings.jsp?themeId=18677&groupID=1643718&hotelID=2018

* This group discounted rate and room block will expire on Friday, July 28, 2017. Reservations made after July 28th will be on a space-available basis at the hotel's current selling rate.

CHECK IN/CHECK OUT: Check in time is 3:00 p.m. and checkout time is 11:00 a.m.
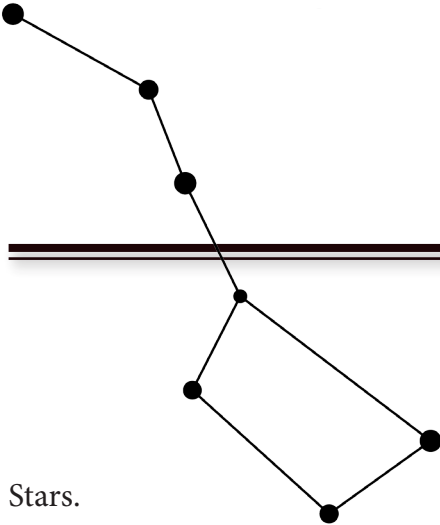
SERVICES & AMENITIES:
Complimentary in-room Wi-Fi & hardwired internet access, in-room safe, 8 on-site dining options, 24-hour fitness center, spa, swimming pool, on-site parking (discounted self-parking rate of $7/day available during event dates; $20/valet).

Register Now

The Big Dipper

Movement, Metrics, and Meaning

by **Rick St. Germain**
CMPIC Canada

Stars.

A bazillion of 'em up there. Jewels in the night. I never tire of this sight.

I've been coming back to this place, this grassy knoll behind my grandfather's cottage, since I was a boy — the time that I slipped away from the family gathering to catch fireflies and discovered the stars instead. This place is mine now and I come back each summer, to this small patch of grass under the stars, to reflect, to recharge, to take a break from the constant demands of my aerospace CM job.

There's magic and wonder in this place, and CM too.

Consider the Big Dipper — up there, to the left. Go ahead, grab on and swipe up a scoop of space between those two starry configurations over there. The volume of stars in the dipper's bowl defines that space, the transition between the configurations. And isn't that what a change is — a volume of acquired knowledge that defines the transition from one configuration to the next?

We deposit that knowledge into convenient containers: problem reports, change requests, assorted implementation work products — bright sources of useful knowledge, just like the stars and galaxies glittering in that dipper's bowl.

But there's more going on here. We've dipped into a moving stream of stars: the Milky Way, our own galaxy seen edge-on. It's moving through space at

vast speeds, and we along with it. It's a flow over time — volume's first derivative.

Velocity is its measure: the rate of change. Here comparative metrics reign — groupings and comparisons that give us real insight into the health of our processes. Planned versus actual values point us to process areas that need work, guide us to root cause, opportunities for improvement.

And then there's the Stick, velocity's trend vector over time — the second derivative. Rate of acceleration metrics tell us about trends in the market, our ability to respond, help us to anticipate and predict rather than react.

I've learned so much here over the years. Useful things that I've applied successfully in my CM practice. My summers here are like panning for gold — I'm hooked and I keep coming back. What other treasures can I find in that Dipper's bowl? What CM secrets will it reveal next time? What else can I bring back to my CM practice from this trip?

Look up and explore for yourself.

Rick St. Germain is a CM researcher, consultant, trainer, and coach with over 30 years experience in implementing military and commercial CM processes for both hardware and software. He is President and Managing Director of Nouvella Consulting Services based in Ottawa, Canada, and is Chief of Canadian Operations for CMPIC Canada. He can be reached at rstgermain@rogers.com

RICK ST. GERMAIN

U.S. Army Drives Configuration Management Improvements

Modernizing CM processes to deliver new agility, efficiencies, and cost savings

by David Ewing
Aras Corp.

Today's U.S. Army modernization efforts are driving new processes and systems throughout military installations. The U.S. Army Watervliet Arsenal, WVA, is an integral component of the U.S. Army's Tank-automotive and Armaments Command (TACOM), one of the Army's largest weapon systems research, development, and sustainment organizations.

Located just outside Albany, NY since 1813, the Arsenal has long been known as America's "Cannon Factory" and is a critical source of today's high tech, high powered weaponry. Today, the Arsenal is a billion-dollar manufacturing complex certified to ISO9001:2008 and CP2, the Army's Contractor Performance Certification Program. It occupies 72 buildings on 42 acres, encompassing 2.2 million square feet of manufacturing space.

WVA is the U.S. Army's primary gun tube maker with products including cannons for the Army's main battlefield tank, the M1A1 Abrams, as well as precision components for artillery cannons, battleship guns, marine drives, scissor bridges, and rocket motors. WVA was instrumental in providing the kitting and assembly for the up-armoring of U.S. Army Humvees in 2006.

WVA is also home to the Army's Benet Laboratories, a part of the Army's Armament, Research, Development and Engineering Center (RDEC). The co-location of WVA and Benet Labs allows for complete product lifecycle management, from initial concept and engineering to tool development, prototyping, and large-scale production.

Modernization for Better Configuration Management

Command management at WVA has introduced a series of business systems modernization initiatives across the Arsenal for configuration management (CM) improvements in operations through Lean and Six Sigma. To support these aggressive initiatives WVA needed to take advantage of modern web technologies with open standards so that data access and process integration were seamless.

Arsenal command management recognized the benefits that commercial off the shelf (COTS) software solutions for configuration management provide and decided to take advantage of a single PLM platform approach for manufacturing process planning, equipment & tooling management, and preventive maintenance & calibration. Doing so would enable all WVA personnel to work within a common web platform for improved visibility and better configuration coordination of production processes across the lifecycle - from initial proposal to final production.

Platform Approach to CM in the Factory

To address the configuration management needs in the factory the U.S. Army WVA implemented the Aras Innovator® platform and application suite for:

- Manufacturing process plans with manufacturing bill of materials (MBOM)

- Work instructions, set-up sheets, lot travelers, inspection & test plans, required tooling & consumables

- Secure vault control over CNC programs with association to specific products

- Equipment & tooling crib management

- Preventive maintenance & calibration

- First piece inspection for equipment qualification

- Reports for management, tracking, and status

WVA initially selected Aras because of the comprehensive configuration management capabilities and open integration standards along with the flexibility, scalability and upgradability of the platform.

Driving Continuous Configuration Management Process Improvement

Now, WVA has been able to drive continuous improvement with Aras as the basis for configuration management of manufacturing process plans, equipment & tooling, and preventive maintenance & calibration. WVA has a CM foundation for operations while delivering the flexibility to adapt processes quickly driving new agility, efficiencies, and cost savings.

The WVA initiative has extended CM process automation from product proposal through process planning and production. As WVA receives production proposals and associated models and drawings from various army installations and commercial customers, they quickly develop a preliminary bill of materials (BOM) configuration and start to define the manufacturing routing for the new product to move through the factory.

This establishes the basis for manufacturing process definition enabling WVA personnel to assemble costing data for quoting to customers. They also establish the product process structure that will be used throughout production, helping to quote more effectively and ensure cost and margin targets are achieved.

Then, the product routing is further build out to include work stations, inspection & test control plans, work instructions, equipment requirements, and necessary tooling along with the set-up procedures and associated drawings. WVA is able to define the work center routing cycle times necessary to produce the new product and the physical equipment and tooling assets and associated labor needed to make it happen which together drive product manufacturing cost structure. By doing so all stakeholders have access to the comprehensive manufacturing bill of materials, or MBOM with production costing information.

By initiating a new product configuration, WVA is inherently creating the product's manufacturing structure and associated cost structure from inception. When WVA finalizes the routing for production and designates released status within Aras the ERP system is pre-populated with work stations, enabling BOM explosion for ordering, order quantities, and production scheduling from SAP.

The Aras platform is also integrated with WVA's legacy costing system to manage all of the standard costing associated with different manufacturing operations, work stations, and labor rates. With the improved configuration control, WVA is able to better estimate the

entire cost of manufacturing a new product, including labor, which helps profitable quoting. In addition, because of the extensive online records WVA is better able to support auditability for ISO 9001:2008 quality systems requirements, the Defense Contract Audit Agency and the Defense Contract Management Agency (DCAA and DCMA).

Layering CM Processes Over Existing Systems

Open standards for data interoperability have provided the ability to easily integrate all of the WVA information systems - including SAP and other legacy systems such as the WVA costing system - to provide consistent configuration information and a single, secure version of the truth for people with access.

WVA has also linked the shop floor CNC programs for the CAM systems for production configuration control. Every product produced in the factory requires a series of CNC programs that govern the Mastercam and SmartCAM-enabled equipment for precision manufacturing. WVA vaults the CNC program revisions in Aras Innovator's controlled environment and associates the appropriate CNC files with the right manufacturing process plan providing synchronization and accuracy. Then, the first piece inspection results are recorded as part of the configuration to qualify the equipment and tooling for the production run.

The configuration also produces the production lot traveler in a digital format - the information that moves through the factory from workstation to workstation with the physical product lot - along with the equipment set-up instructions to support Lean quick change-over.

Today, the U.S. Army WVA clearly understands the benefits that configuration and change management process automation provide especially when combined with the ability to manage data and deliverables in a secure ITAR compliant format. Using the Aras platform for configuration and change in the manufacturing environment, WVA is able to manage the production process and asset configurations necessary to manufacture the wide array of products produced by the organization delivering online efficiencies and significant cost savings.

David Ewing is a product marketing manager at Aras, and is responsible for configuration management standards at Aras. David has over 15 years of experience implementing configuration management principles in PLM in the aerospace industry. David was responsible for PLM usage and development at Cummins and at B/E Aerospace his team developed capabilities for Model Based Definition, configuration management, design automation and other business processes. Earlier in his career, David was with General Electric in the Energy and Aircraft Engine businesses. David holds a BSME from the University at Buffalo and an MBA from Purdue University. He is certified in configuration management, project management and is a green belt in DFSS.

DAVID EWING

New Beginnings
IT in a Stewardship Environment

by **Kim Robertson**
Value Transformation LLC

Leave Taking

Katharine Xavier had accepted the very generous offer from Mike Tarquist to join Genesis Test Equipment as manager of IT. It had been a busy three weeks since the SNESCM event in Copenhagen. Much of the time since had been spent doing all of those things that have to be done when relocating. The rest had been in silent contemplation. Her decision to now leave the villages and landscapes of her native Pamplona, Spain for what could be a very long time had not been altogether an economic one. Katharine enjoyed new challenges.

Her few belongings had already been boxed collected and delivered to a company owned town house near the Genesis main headquarters. This eclectic collection of her travels and educational pursuits mixed together with a healthy dose of cook books embodying Pamploma's Basque culinary treasures was a touchstone to who she was. She was already planning a small dinner for the Genesis management team when she was settled in.

London

A grinning Sangita greeted her after she cleared Heathrow customs. They travelled by tube to Shepard's Bush station and walked across the street to the Hilton London Kensington. After settling in they met at the Executive lounge for a glass of wine.

"What style of management does Genesis use?"

Katherine asked after the waiter left.

"Genesis uses what is known as Stewardship rather than Patrimony as a management philosophy," Sangita started. "The company is rather unique in this regard. While there are rules and regulations mandated by either United States Federal Statutes or International Law the individual employee is part of something larger. Employees hold the company in trust for the future and this is reflected in how they view their work and how Genesis conducts its business operations."

"This sounds very positive," Katherine replied. "It is similar to how we document and then close out an archeological site in trust for future generations. Isn't that rather at odds with the standard 'everyone out for themselves' mentality of many firms?"

"It may appear that way," Sangita agreed. "Embracing Stewardship has been very beneficial to the company.

Let me clarify that. Most of the time the philosophy has been beneficial to Genesis; where it goes wrong is when an individual forgets that the far reaching aspects mean something greater than their own need for self-validation. Self-validation takes many forms from who has the closest parking place to who has the fastest car, biggest house or who put someone else down at the last staff meeting. Fred Keating, your predecessor, took advantage of the stewardship mindset. His attempt to sell technologies to foreign firms in contravention of U. S. Federal statute could have caused a loss of trust and credibility with our customers and employee base. The Genesis team's quick response mitigated the risk and actually increased our international reputation. Now I'm going to switch subjects on you. What size office do you need?"

"That's an odd question," Katherine said. "I just assumed they would be based on job description like in other firms. The people who do the real work squeezed into phone boxes and CFOs sitting in 1,000 square foot palatial splendor."

Sangita laughed, "Office size is scaled to need not position at Genesis. A product development engineer may have an entire research laboratory while a department lead has little more than a desk with a few visitor chairs. The resources allotted where they do the most good."

IT Stewardship at Genesis

As their week in London progressed discussions eventually turned to the role of IT and stewardship at Genesis. They had lunch at Ye Olde Mitre, on Ely Court Place as it was secluded with Tudor beams, coal fires, portraits of Henry VIII and whisky-water jugs hung from the ceiling.

"I understand and am totally on board with everything we've discussed so far," observed Katherine. "I guess I need you to go into greater depths as to how a company based on Stewardship can survive in a product-based environment filled with regulations and competing requirements in both the CM and IT charter. Isn't Stewardship more in-line with a service industry?"
Sangita thought about it for a moment, ordered another beer and then answered.

"When we met I was impressed by your statement - 'until non-obvious factors like workforce experience, infrastructure viability, cohesiveness of the project team, training to recognize how referenced documentation and citations relate to the individual performing the task contribute to the contractual implications.' Stewardship is an extension of this same belief. It builds from the bottom up.

"The untrained or improperly trained employee who doesn't grasp Stewardship basics may be performing their assignment to the very best of their ability and failing. They make innovations that result in their job more efficient, saving them time and in their view saving the company large sums of money. They may truly believe that they should be rewarded for their efforts without understanding any of the negative impact that result. I observed a case of this not long ago at a company called BGS.

"There was an IT crash and when the back-up tapes were retrieved facility it was found that Supply Chain had not informed anyone the storage facility contract stated that only paper could be stored. In addition the tapes had that had been stored in violation of the contract had been compromised due to a MRI screen being performed on the storage box. Supply Chain was doing the job to the best of their abilities …"

Everything Old is New Again

Katherine laughed. "The Supply Chain person didn't understand how their function fit into the Stewardship philosophy relative to IT and record retention. Some CM and IT practitioners have told me emphatically that CM is a discipline based on stringent rules. I believe it is actually of an older heritage. Anthropologically some form of IT and IT security has been around since before people settled in the Tigris and Euphrates valley. The idea that because we now contend with these issues electronically instead of using clay tokens sealed in Bullae is something new doesn't hold up technically or historically. The basic reasons for the requirements have not changed. The tools may have changed but the fundamentals haven't. The same is true of CM. The early Phoenician's and people in China's first dynasty made interchangeable parts and by inference had at least the basics of CM well established.

America's John Paul Jones struggled with these issues when modernizing Empress Catherine the Great's navy. Before he implemented CM on the ships and logistics management ships were loaded with whatever was on the dock. It didn't matter to the dock hands that cannon balls loaded on a ship didn't fit the guns. They were clearing the docks and that is all they cared about."

"Exactly," laughed Sangita. "Everything old is new again …"

"I now see my role at Genesis as something other than a traditional manager," smiled Katherine. "I like that as it will include socializing what IT can do to support the infrastructure as a whole and coordinating our needs to facilitate that support within the company with the goal of good stewardship in our internal and external communities. What have you noticed as the largest IT issues?"

Sangita paused before she answered. "From a regulatory perspective I have a gut feeling that Genesis is doing well. We've recovered from a major ITAR issue involving Fred Keating. I'm not so comfortable with the infrastructure. Fred was a wait and see kind of guy which may have been due to his attention being … elsewhere. I think that perhaps my feelings should be weighed against what you find after you get settled."

Changes at Genesis

Several months later Mike sat looking out of his window as he sipped his ever-present cup of cold coffee. The skyline was bathed in the soft glow of the September sun. IT was stronger than it had ever been. Since Katherine's rebalancing of resources productivity had increased in every department.

He was impressed with Katherine. She had been the right choice at the right time in the company's history. Shortly after she arrived she interviewed every one of the 1,600 employees either one-on-one

or in group sessions. She quickly discovered subtle issues in the IT critical chain and implemented fixes. Powerful computers assigned to individuals that did not require them were reallocated to the design teams and others who needed them and were struggling with underpowered units.

LAN performance was dramatically increased with fiber-optic infrastructure improvements and the installation of Gigabyte Ethernet switches with layer 3 VLAN capabilities. Voice over IP was added to the internal network capabilities and Genesis was poised to take advantage of some exciting emerging technologies that fit well with their growth plan. She had even put together a Supplier-customer-Genesis team to work out protection against possibility of q-bits breaking through standard protection algorithms designed to protect sensitive data.

He finished his coffee and took the stairs to the street below. If he hurried he could just catch the early train. As he made his way onto the crowded Metro Station platform he thought about where the company was and where it was going. It looked like the future of Genesis was in good hands.

...

A serious looking middle aged woman's face filled the TV screen, "We interrupt regular scheduled programming with this update on the terrorist attack at Metro Station …

"The CCTV footage we are about to air of the bombing that killed 15 and injured 27 is graphic in nature. Seconds before the explosion the bomber … you can see him here … was tackled by this bystander causing them both to fall onto the walled track surround below the main platform. This quick action caused the blast to be directed away from the platform area saving the lives of hundreds of rush hour commuters. The courageous bystander has now been positively identified as the highly respected Muslim community leader and CEO of Genesis Test Equipment Mike

Tarquist.

"As more information develops we will keep you abreast of this tragedy … now back to our regularly schedule programming."
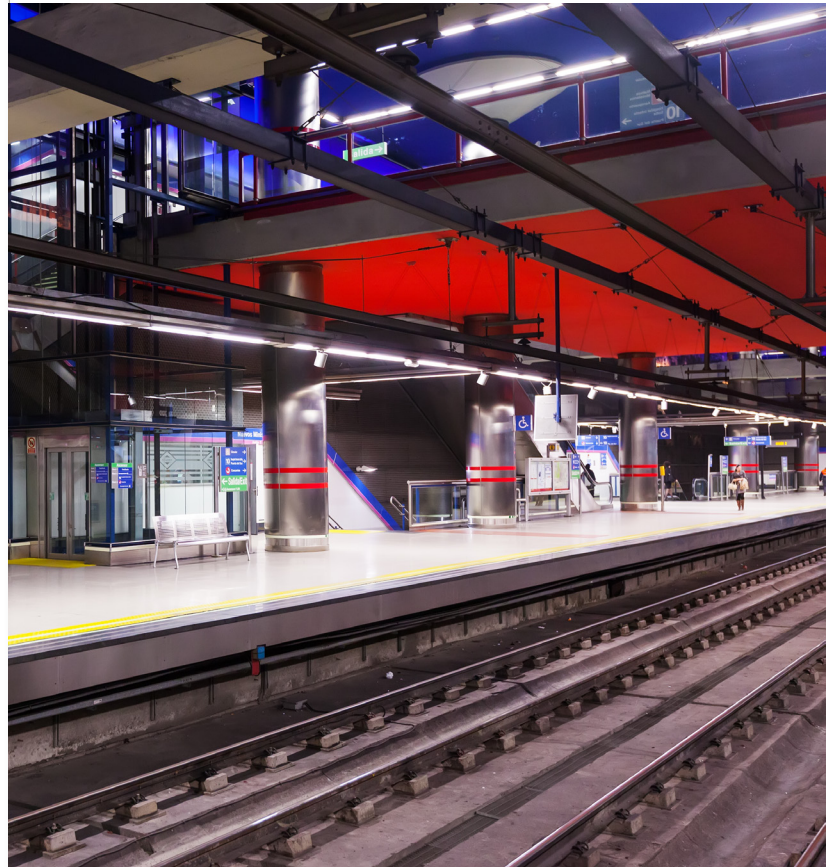
Kim Robertson is a NDIA Certified CM practitioner, consultant and trainer with over 30 years of experience in contracts, subcontracts, finance, systems engineering and configuration management. He has an advanced degree in operational management with a government contracts specialty and is the co-author of Configuration Management: Theory Practice and Application. He can be reached at Kim.Robertson@ValueTransform.com

VALUE TRANSFORMATION LLC   **KIM ROBERTSON**

"Hanging Paper"

by Steve Easterbrook
CMPIC LLC

What is Meant by "Hanging Paper"

Example: A change request (CR 24511) is approved and affects a document at Revision B. The organization does not update the document and instead notes the document is now at "Rev B + approved CR 24511". The document will get updated "eventually". However, "eventually" can be a long time, and sometimes documents never get updated. It can get bad - e.g. a specification that had 182 approved, but unincorporated, changes!

Potential Problems with "Hanging Paper"

(1) Organizations invest, or will invest, a lot of money on automated systems that allow users to retrieve necessary and accurate information. If that information is not current because there is a change that was approved, but not incorporated, one needs to question the need for automation in the first place.

(2) A user may not know that there is a change approved against the document and may work to the wrong revision/version.

(3) If the user knows that a change is approved, the user will have to print the document and red-line it manually.

(4) From a traceability standpoint, there is the question of what revision of a document was actually used.

5) The CM databases will need to be updated to show the current revision "plus changes" and then updated again as changes are incorporated.

(6) If there is more than one change outstanding against a document a user might incorporate the changes in the wrong order and this sometimes can be a disaster.

(7) The time to find out what you need to work to, in terms of correct documentation, may be greatly extended.

(8) As-built data is difficult to interpret. Many unincorporated changes listed against hundreds, even thousands, of documents greatly increases the time it takes to figure out the actual configuration of an item.
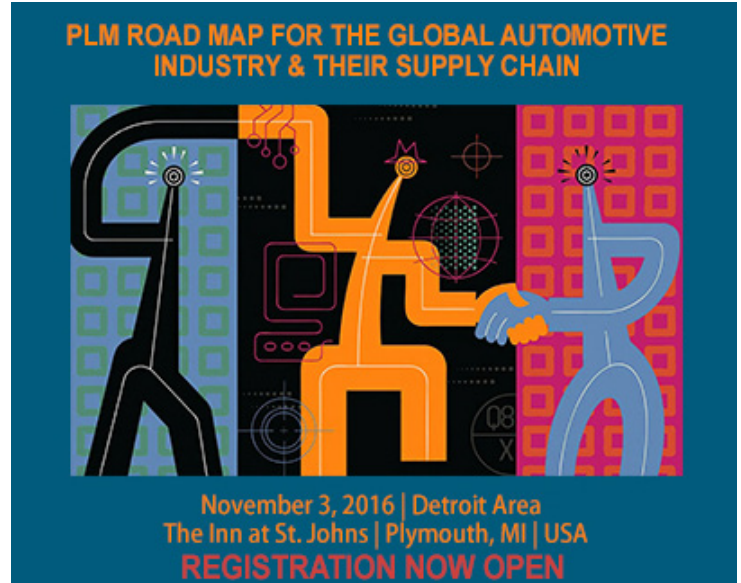
(9) The extra expense, time, and confusion associated with "hanging paper" may exceed the time it would take to update the document correctly the first time.

If documentation updates were planned and scheduled properly, as part of an effective and efficient change process, it would possible to have updated documents available for use when required and would avoid the "hanging paper" issue.

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Thing 1 and Thing 2

by Leo Clark
CMPIC LLC

There are only 2 things you do at work:

Thing 1 is "Write stuff down"
Thing 2 is "Do what you wrote down"

Seriously. Ask yourself, "How often should I ignore the documented procedure and build something that is non-conforming to the design?" Hopefully the answer is "Never".

So if there only two things, there are only two ways to spend money:

- Authorize spending money to "write stuff down" called a Change Order (CO).

- Authorize spending money to "do what you wrote down" called a Purchase Order (PO) or a Shop Order (SO).

Your acronyms may be different but don't panic. Plus the "Do what you wrote down" authorization could be a Test Order, Compile Order, Repair Order, Upgrade Order or other names. Let's call the category of these authorizations "Task Tickets".

Thing 1 is a Change Order.
Thing 2 is a Task Ticket.

Here is how they are different:

Thing 1 is for the Author.
Thing 2 is for the Audience.

Thing 1 is for Development.
Thing 2 is for Production.

Thing 1 is for Part Numbers.
Thing 2 is for Serial Numbers.

Thing 1 lists the Change Requests for a single document version.
Thing 2 lists the released Conformance Documents for each Serial Number or Lot Number.

Thing 1 tells the author to incorporate one or more change requests into a version of the document.
Thing 2 tells the audience to use the new version to buy or make stuff.

Thing 1 only happens once. You only create a new document version one time.
Thing 2 can happen many, many times. You use that new version each time you buy or make an item.

Thing 1 establishes the bulls-eye that production has to hit.
Thing 2 is production's attempt to hit that bulls-eye.

Thing 1 impacts the configuration information.
Thing 2 impacts the item inventory levels.

Thing 1 and Thing 2 are Action Items which are part of the Change Implementation Plan (CIP). Thing 1 for a Part Number must be completed before Thing 2 for a Serial Number.
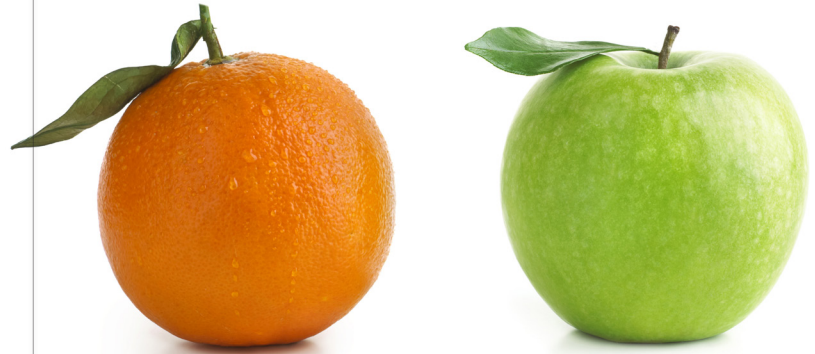
Change Implementation Plans need to take this dependency in mind.

The CM Change process helps organizations analyze, authorize and implement each Thing 1 and Thing 2 as a result of approved Change Requests.

Organizations would do well to remember Thing 1 and Thing 2, especially who goes first. The organizations that say "Let's do the work first and catch up on the paperwork later" are scheduling Thing 2 before Thing 1.

That never works.

Leo is a former Marine from New York. He has implemented quality systems in over 250 factories on 5 continents. In the past 18 years, he has taught CM to over 1,000 organizations on 6 continents. Leo is a member of the American Society of Quality and the US Technical Advisory Group for Quality Management. He is a Technical Reviewer for Software Quality Professional magazine and one of the US Configuration Management experts to the ISO 10007 Technical Committee.

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