



IEEE Embedded Systems Workshop

Embedded Software Development Configuration Management Using Mercurial Hg

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(SEE-CHAN-OW-SKI)

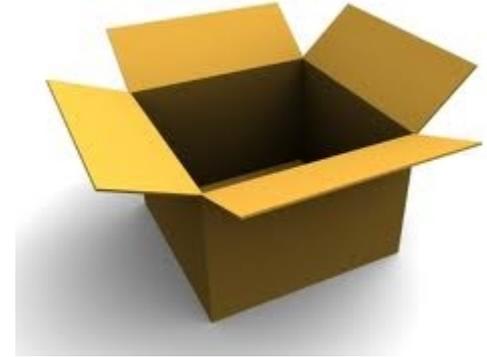
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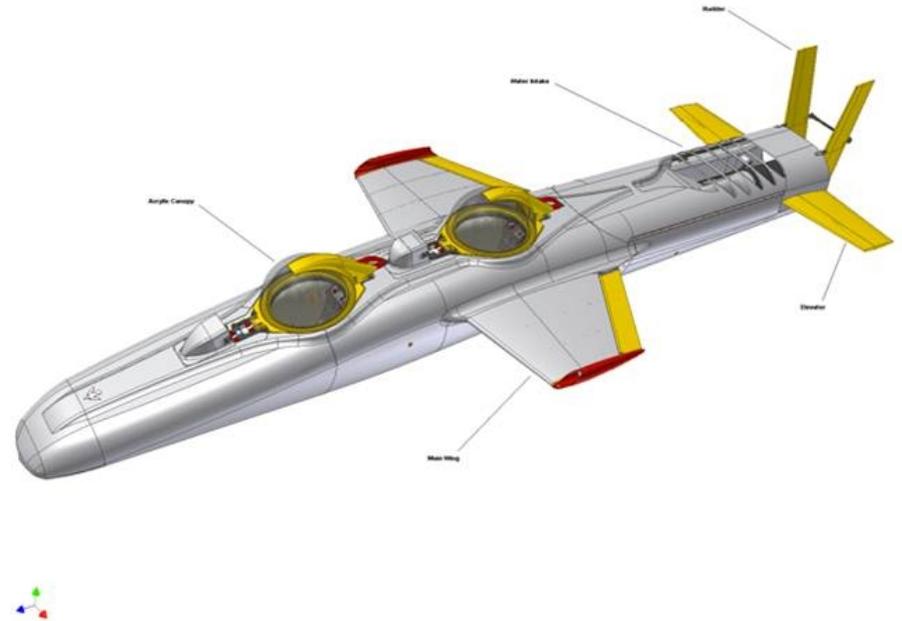
Contents



- Advertisement
- What and *Why this is important to you*
- What is Mercurial and Tortoise Hg
- A high-level introduction to Hg
 - No Hg experience, have CM experience
- Compared to older source control systems
 - RCS, CVS, SourceSafe
- (Audience survey)

Fall Section Conference

Keynote: "Unique Vehicles: Submarines that Fly", Graham Hawkes

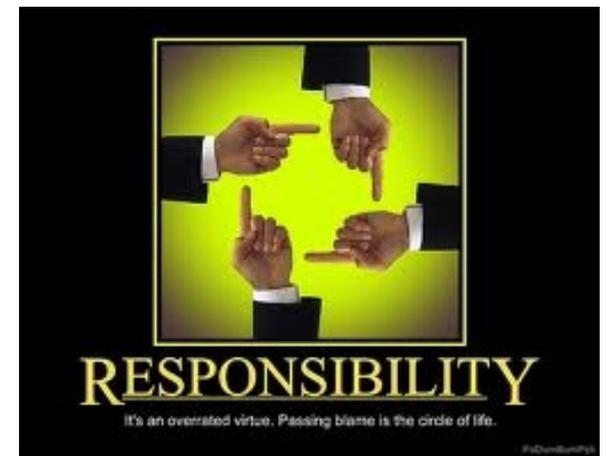


Wednesday, November 14, 2012 5pm-9pm at
Fairlane Center, University of Michigan-Dearborn
www.ieee-sem.org/fall

What and Why This Is Important to You

- Configuration Management
 - “...identifying the configuration of a system at distinct points in time for the purpose of systematically controlling changes to the configuration...”
- “Source control” and release tracking (not change control)

Why This Is Important to You (cont.)



Good CM is *your* professional *responsibility*

*“It is **our job** as professionals to get better at what we do.”*

-- Dr. Chris Wagner

Why This Is Important to You (cont.)

- **You** can run Hg on your PC
 - Part of your PSP, personal productively tool
- CM is KPA in **CMM Level-2**
 - My background using SCCS, RCS in UNIX/Linux
- CM is major section in SWEBOK (Chapter 7)
 - (convinced about CM)
- Hg is Modern, Distributed CM System
- I have using Hg for 2 years, replaced RCS

What is Mercurial



- Configuration management system
- Open source (“free software” GNU GPL v2)
- Runs on Windows, Linux, MAC
- Modern, Distributed CM System

Features



- Small, simple command set
 - (compared to git)
- Mercurial stores *changesets* to entire project, not individual files
 - A list of changes between one checkin and next
 - Supports merging
 - You don't check in *files*
 - Check in the whole repository
 - Advantage with *.h and *.c or *.cpp files

Features



- Distributed - no central repository
- Network-able - ssh built, clone across net
- Branching and merging
 - full command set
- Tortoise Hg is the Windows program

web_new - TortoiseHg Workbench

File View Repository Help

Graph	Rev	Branch	Description	Author	Age	Tags
	37+	default	★ Working Directory ★	Mark Ciechanowski, P.E.	now	
	37	default	default tip changed flyer	Mark Ciechanowski, P.E.	3 days	tip
	36	default	Subra updates for topics, flyer. published.	Mark Ciechanowski, P.E.	7 days	
	35	default	added vector logo to flyer img on web page	Mark Ciechanowski, P.E.	8 days	
	34	default	added img	Mark Ciechanowski, P.E.	8 days	
	33	default	added vector logo	Mark Ciechanowski, P.E.	8 days	
	32	default	Correction for Salvador	Mark Ciechanowski, P.E.	9 days	
	31	default	Changed orange title to "Systems"	Mark Ciechanowski, P.E.	9 days	
	30	default	Changed to Embedded "Systems"	Mark Ciechanowski, P.E.	2 weeks	

filter text

Branch: default Copy message Options

Commit

Parent: 37 (11f8bf5e6ae4) changed flyer

meetings_archive.html

```

00 -271,6 +271,21 00
                                <p>
                                &nbsp;
                                </p>
+                                <p>
+
+                                <table border="0">

```

Output Log

web_new%

Linux Commands

- hg init
- hg commit
- hg status
- hg log



```
$ hg heads
changeset: 6:e8a57efee3b2
tag: tip
parent: 4:2278160e78d4
user: Bryan O'Sullivan <bos@serpentine.com>
date: Mon Nov 01 23:58:46 2010 +0000
summary: Added an extra line of output

changeset: 5:fa74432c4d29
user: Bryan O'Sullivan <bos@serpentine.com>
date: Mon Nov 01 23:58:54 2010 +0000
summary: A new hello for a new day.
```

Online Tutorial

80

Hg
Init

200.59

Hg Init: a Mercurial tutorial

www.hginit.com

Conclusions

- This is *your* responsibility
- Keep up with technology
- Get, Learn, and Use Mercurial or git



References



- References
 - **HgInit** <http://www.hginit.com>
 - **SWEBOK** **IEEE Computer Society 2004**
<http://www.swebok.org>
 - Configuration Management
- Further Information on Technology and Careers
 - **IEEE Computer Society** <http://www.computer.org>
 - **IEEE** <http://www.ieee.org>
 - **IEEE-USA** <http://www.ieeeusa.org>

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