Devtest:
using Lean and Devops practices to bring QA and coders together

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Devtest:
a love story

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Once upon a time...

Bruno
Dev Soft
412
QUALIF

Avril 2009

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

Net&Unik remporte les Itn Awards

Who?

- ~ 2000 users, ~ 40000 transactions per day
- ~ 60 members on team, including
  - ~ 30 developers
  - ~ 10 testers (“qualifieurs”)

What?

udgil056 - 29/09/2012 14:43 — Canal BFT - ID-PV-9 (Soft)

orange soft
commande unique

Ligne d'éligibilité **0145451101 (actif)**
Adresse d'installation **rue Brocat - 75011 PARIS**

administration
déconnexion

Acquisition 1 choix offre 2 configuration offre 3 ligne support 4 coordonnées et paiement 5 confirmation

Configuration de l'offre Livebox zen - sans abo tel

Cochez les options souhaitées ci-dessous

Thématique | Internet | Télévision | Téléphonie | Prestations & promotions | Matériel

Accès internet

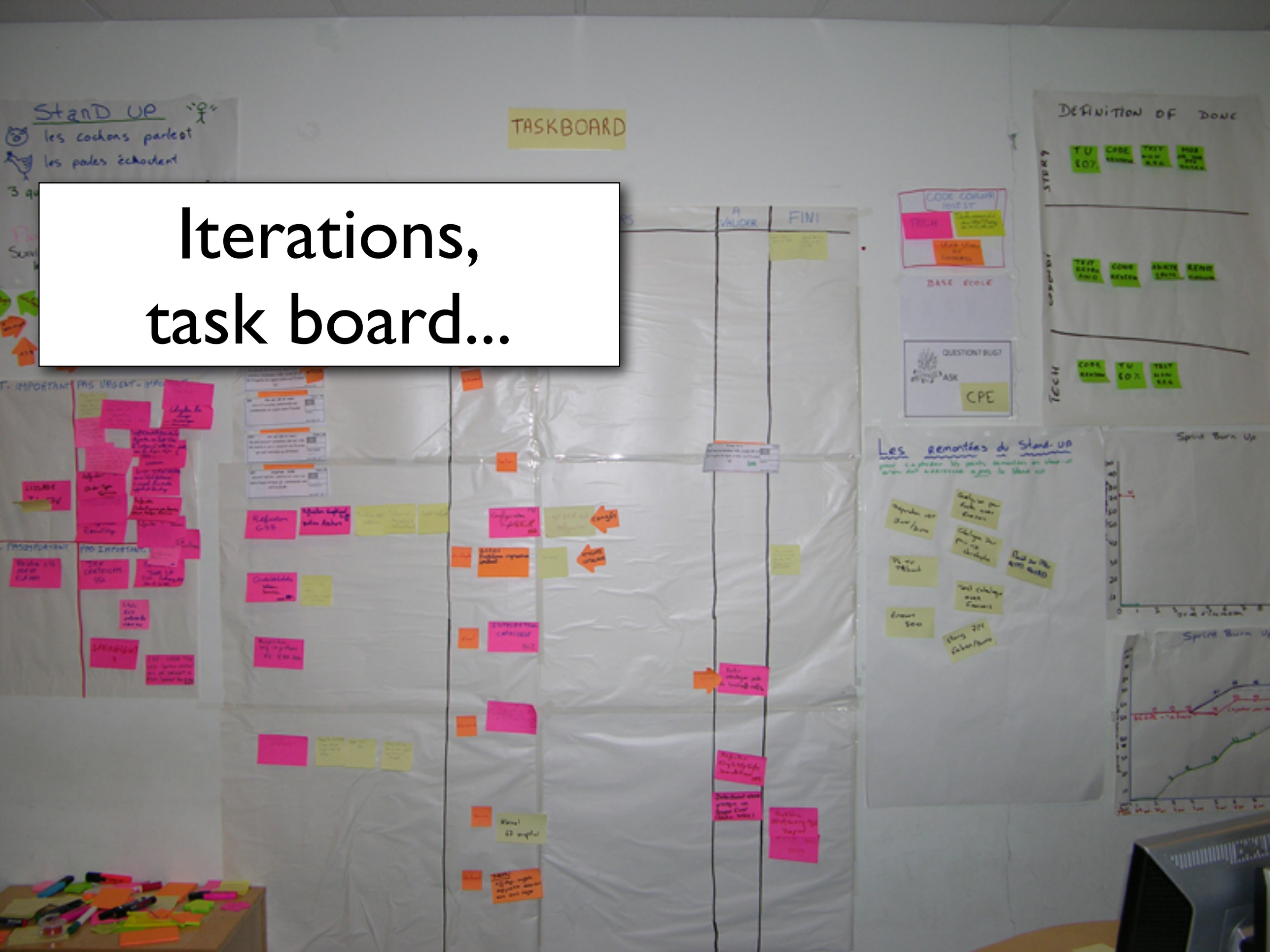
- **Internet ADSL**
  - Débit: 20 Méga Max
- **Messagerie**
  - Email souhaité:

Options internet

Musique premium Deezer Promo -50% pendant 2 mois	10,00 € / mois
Musique Deezer	5,00 € / mois
Giga mail Promo 2 mois offerts (acquisition HD)	2,00 € / mois
Anti-virus firewall Promo 1 mois offerts (acquisition HD)	5,00 € / mois

Autres options internet

retour — continuer



Iterations, task board...

Pair programming

Tableau de bord [Jenkins] - Mozilla Firefox

Fichier Édition Affichage Historique Marque-pages Outils ?

Tableau de bord [Jenkins]

500w.intranet-paris.francetelecom.fr:8080

Jenkins

Continuous integration

Relations entre les projets

Vérifier les empreintes numériques

Administrer Jenkins

File d'attente des constructions

File d'attente des constructions vide

État du lanceur de constructions

#	Statut
1	En cours d'éxecution Soft-Main-Build #1330
2	En attente
3	En attente
4	En attente

	Dernier Succès	Dernier Echec
Soft-Branch-Build-2.2.5	11 j (#109)	19 j (#104)
Soft-Branch-Build-2.2.6	1 mo. 0 j (#28)	2 mo. 7 j (#19)
Soft-Branch-Build-2.2.7	23 h (#58)	N/A
Soft-Branch-Build-Back	9 j 22 h (#138)	10 j (#136)
Soft-Deploy-Mock-Integration	4 j 3 h (#244)	11 j (#222)
Soft-Deploy-Snapshot	23 h (#90)	1 mo. 8 j (#63)
Soft-Main-Build	21 h (#1328)	2 j 4 h (#1298)
Soft-Merge	3 j 20 h (#1)	3 j 20 h (#5)
Soft-Release	3 j 3 h (#24)	3 j 3 h (#23)

Icône: S M L

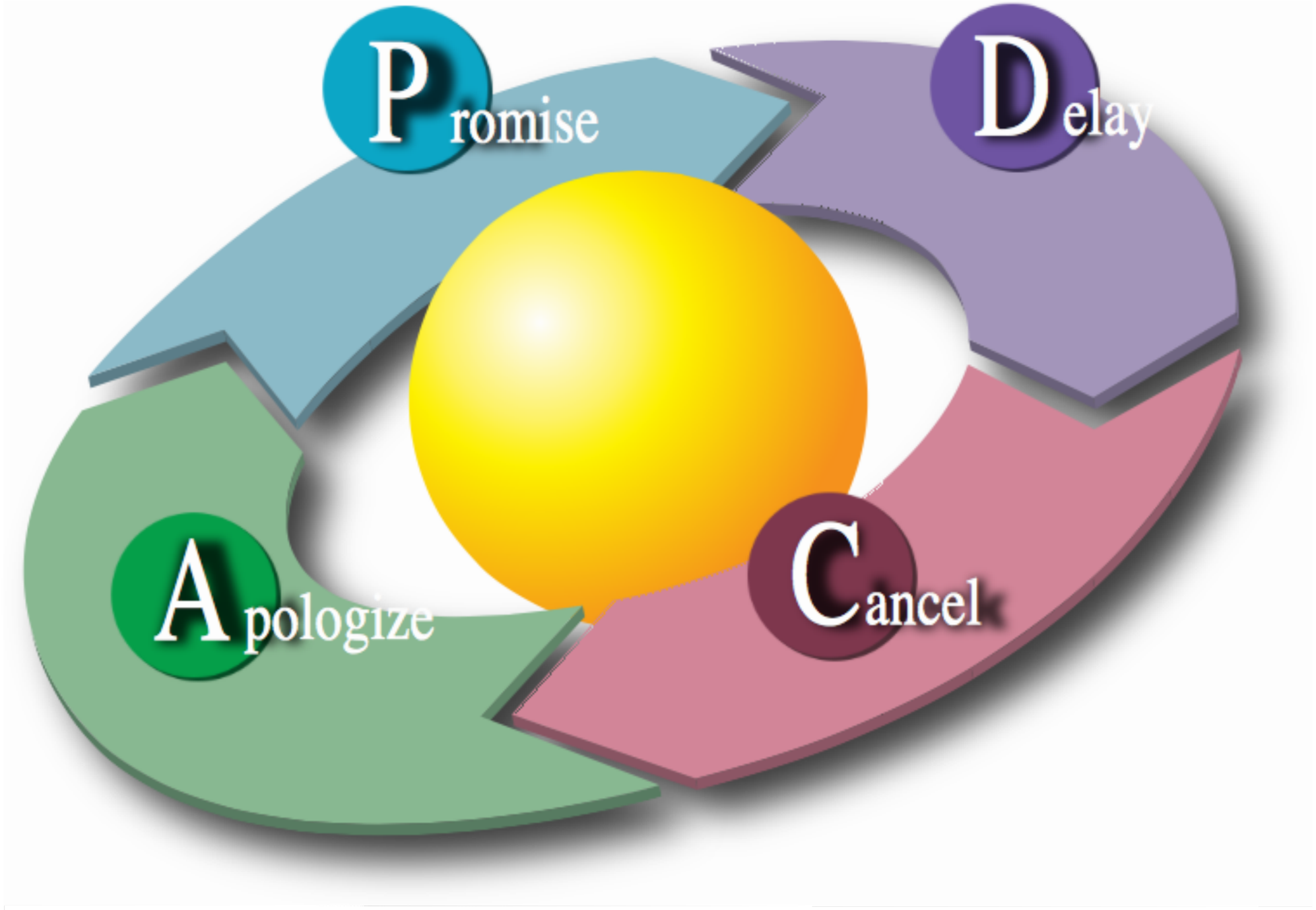
Légende RSS pour toutes RSS pour tous les

Aidez-nous à traduire cette page

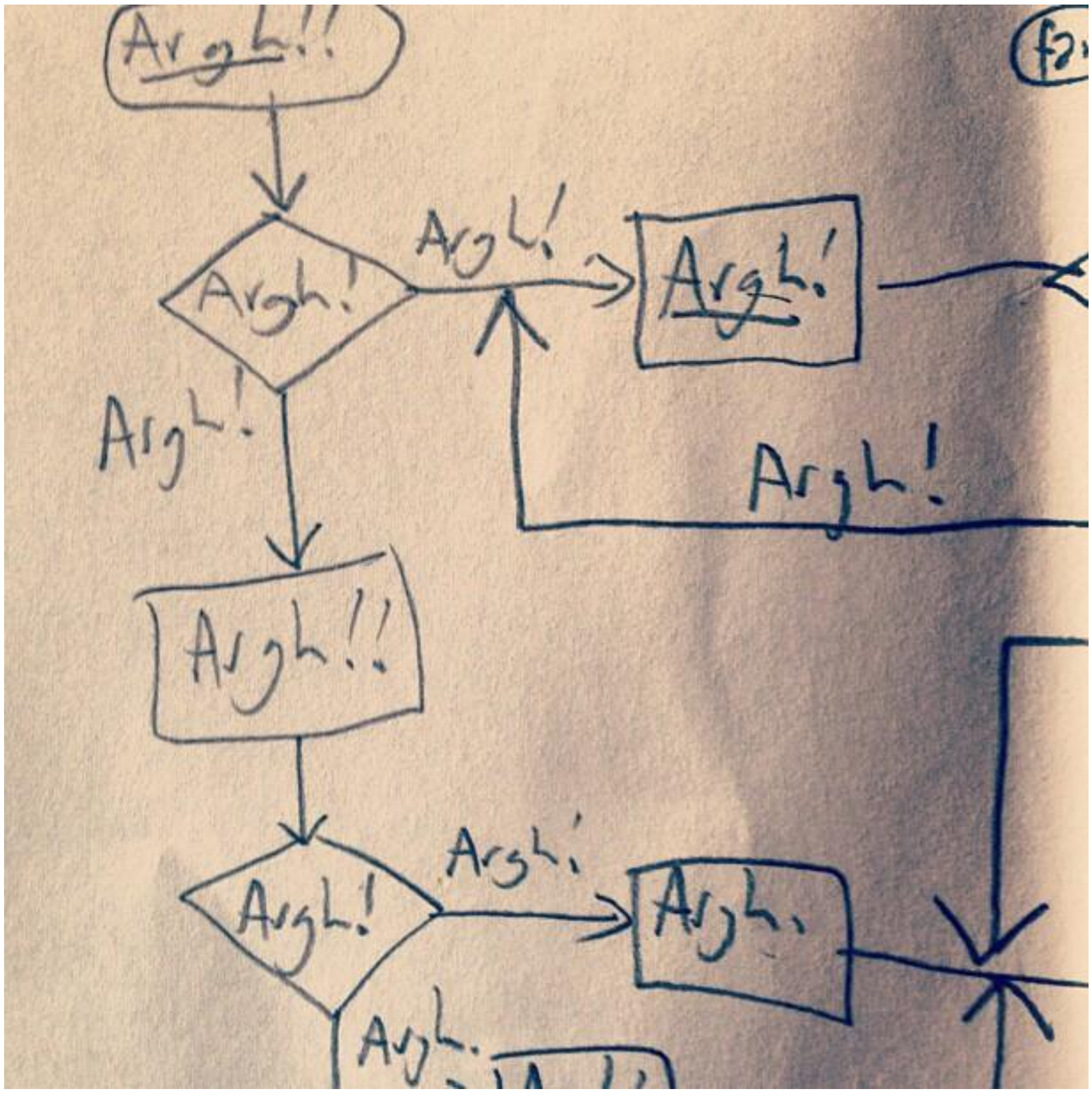
Page générée

But not all was well...

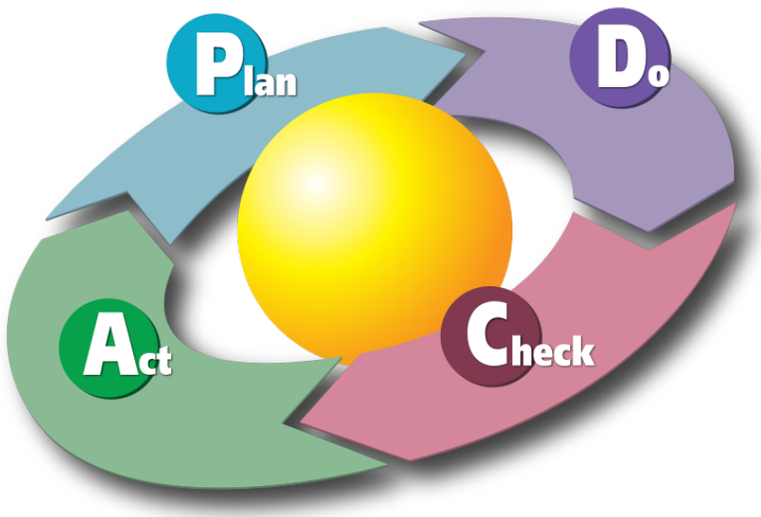
Kaizen spirit ?



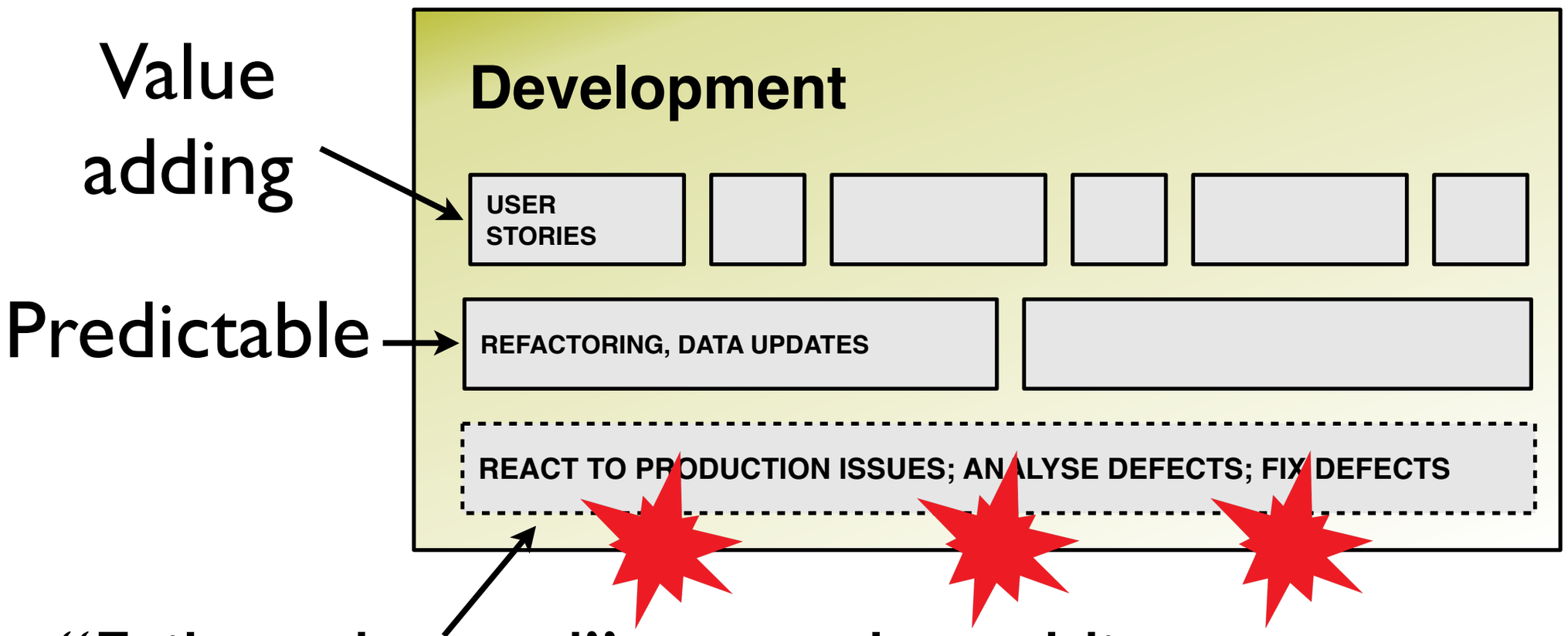
The actual process...



“Why is everything taking so long?”



CORE profile



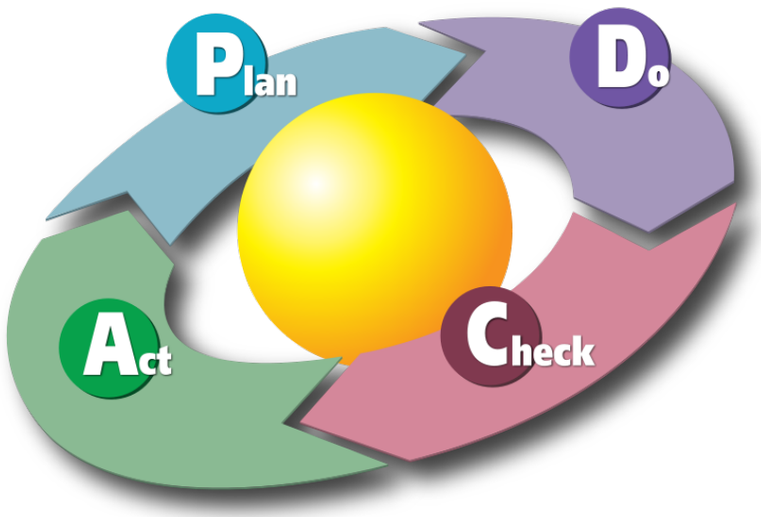
"Failure demand": non-value adding, perturbs other work

Based on the CORE profile tool, cf.
http://www.slideshare.net/operaepartners/lean-it-strategy-lean-measurement-and-organizational-design

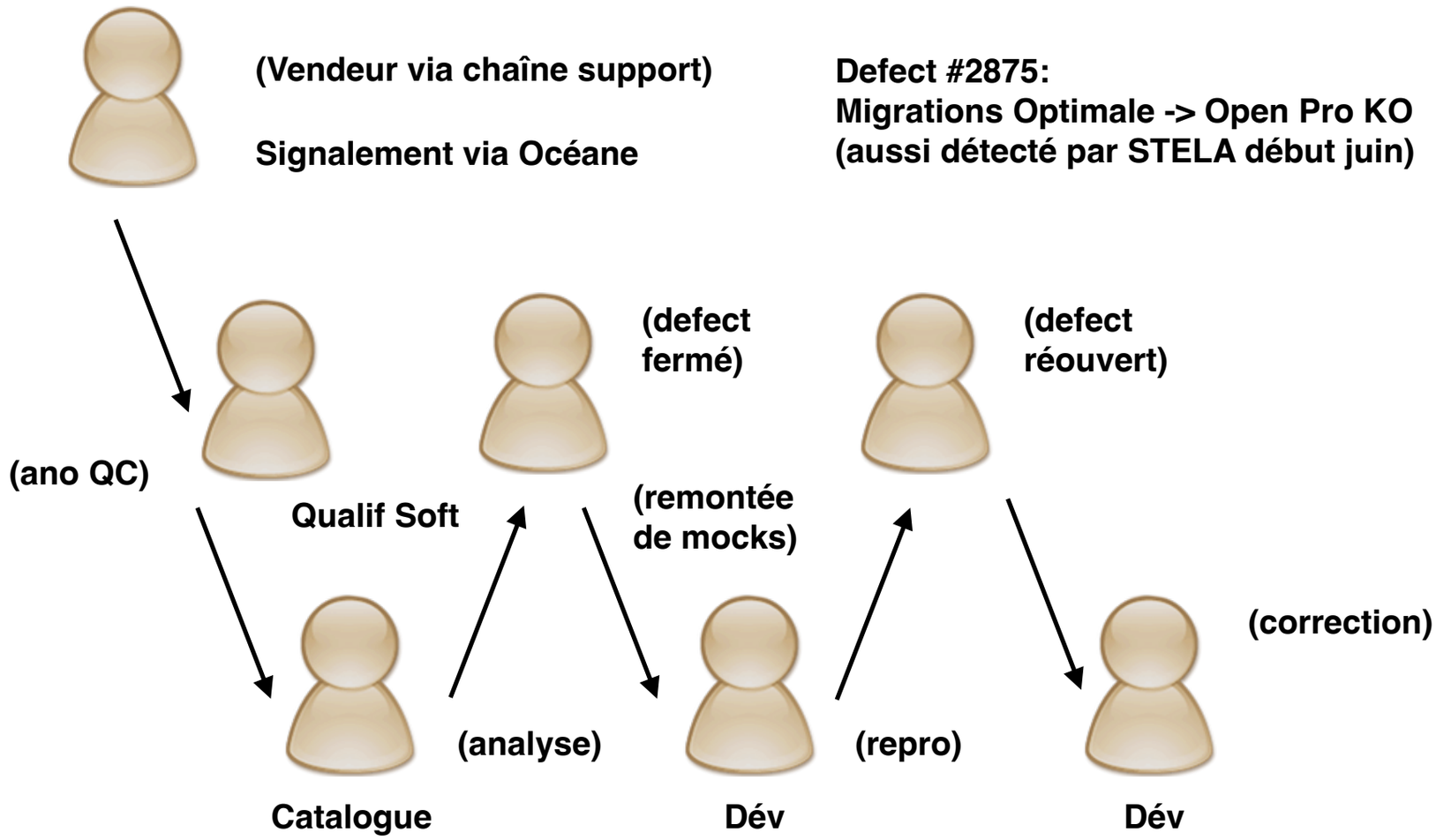
End user impact

- Constant background grumbling from end users, eroding confidence in product
- Flaring up into occasional crises on “MEP” days (deployments, roughly monthly)
- Substantial monetary impact: each failed order is re-processed manually

Why are defects slowing us so much?

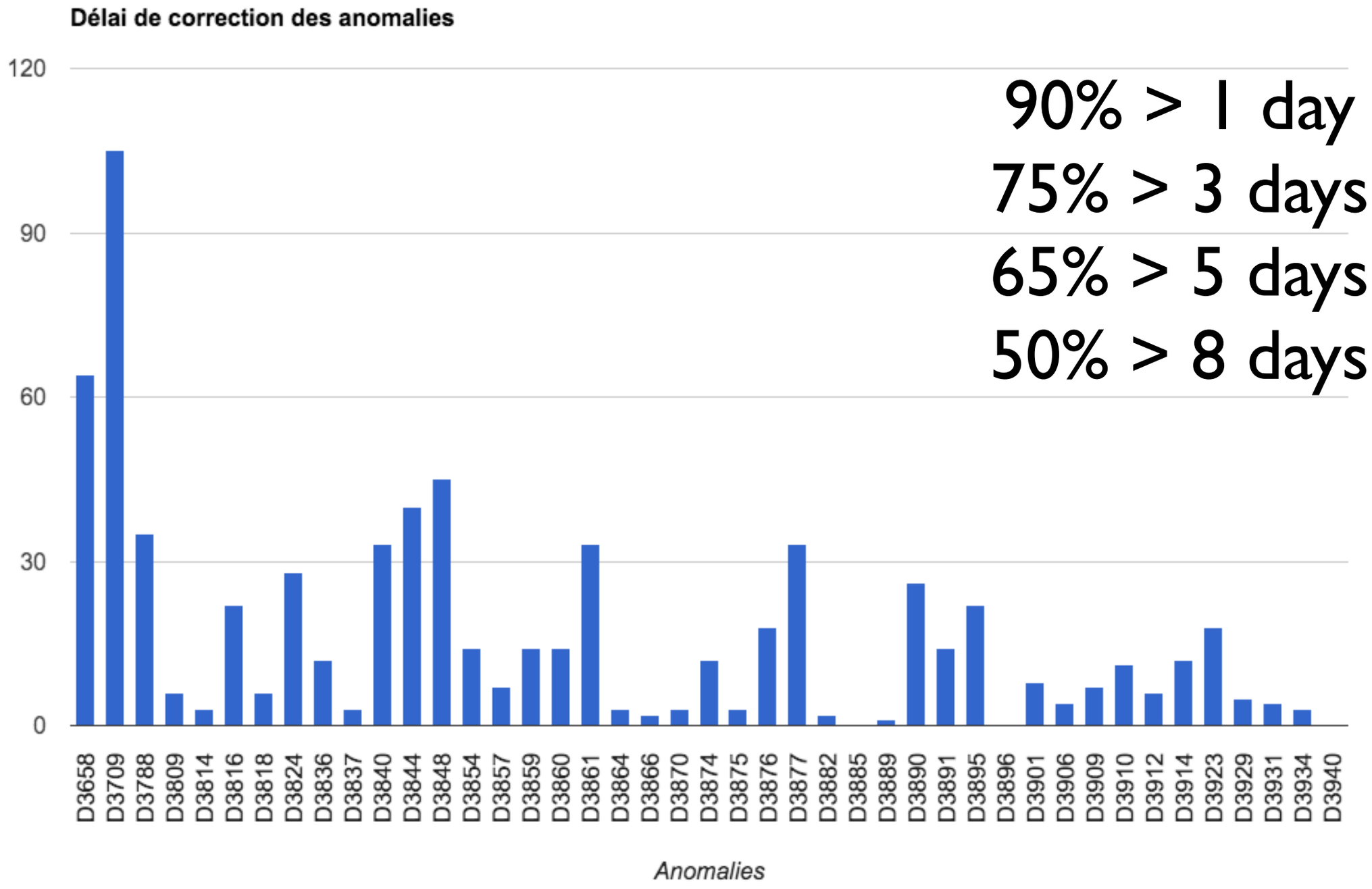


“Staple yourself to a bug”



- Total lead time: 6 weeks

Best repeatable performance?



90% > 1 day

75% > 3 days

65% > 5 days

50% > 8 days

Hidden costs of production defects

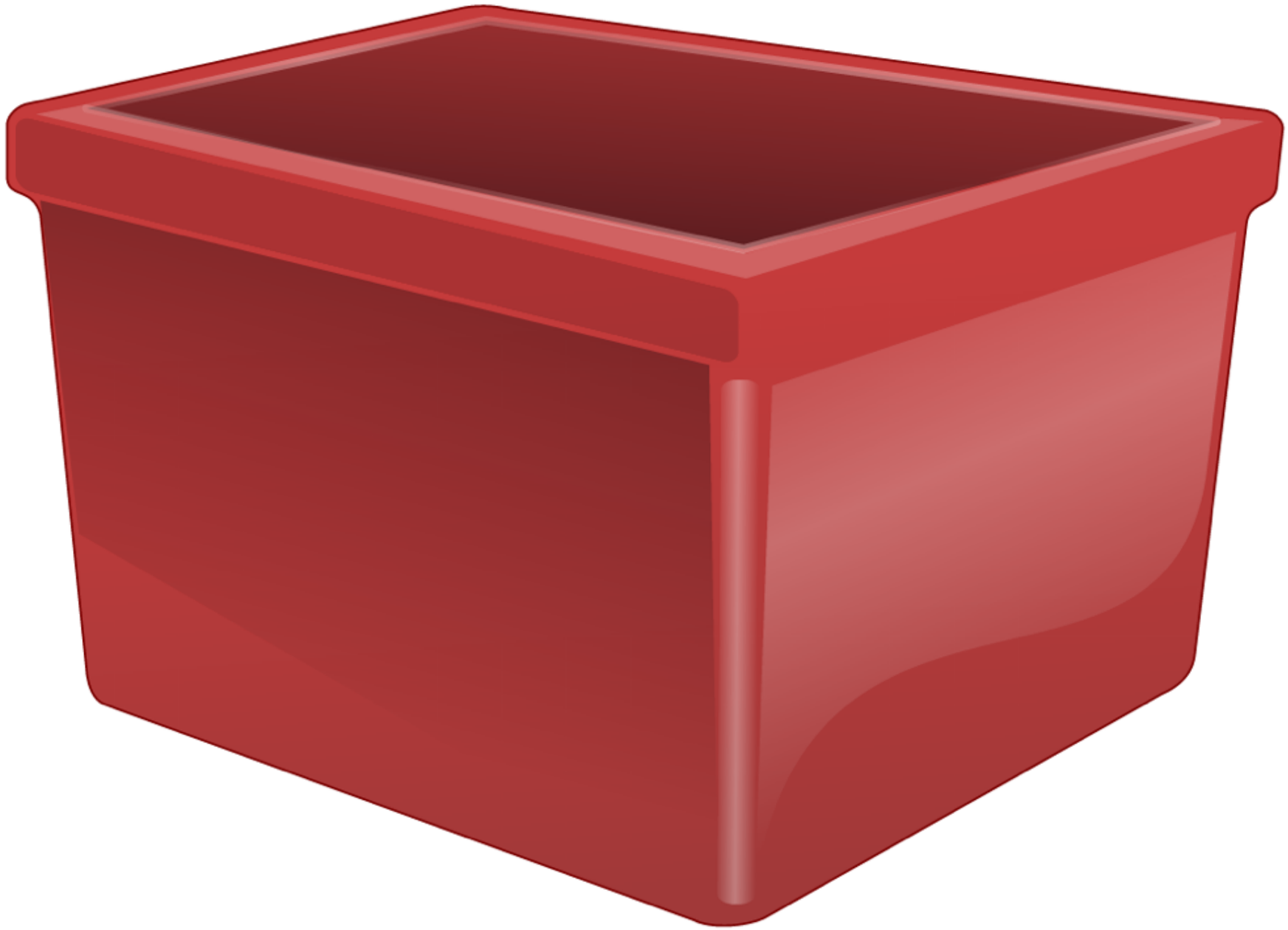
“Passive cost windows”

- Bug introduced
- Bug shipped
- Bug detected
- Bug reported
- Bug fixed
- Fix shipped

} “Official” fix lead time

} Actual impact

Red bin system



Existing, but under-used...

2.0.2

STELA
Soft Tool For Errors and Logs Analysis

Runtimes Defects

Recherche de runtimes

Type ○ Tous ○ Client ◉ Serveur

Rechercher

○ du 13 mai 2014 0h au 13 mai 2014 0h

Date

◉ le 13 mai 2014

Id

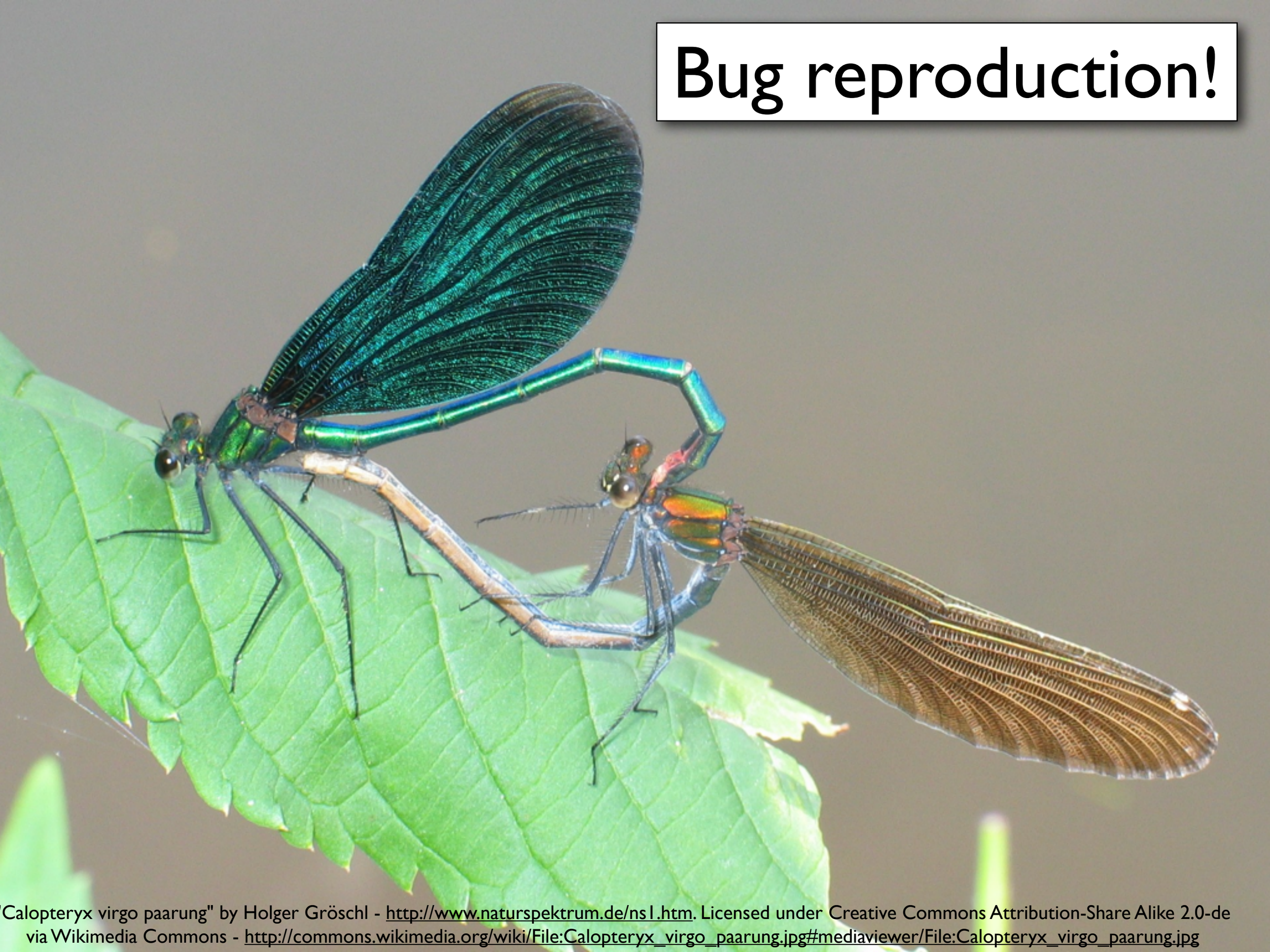
☐ Plus de critères

	Id	Nom	Type	Statut	Open	Info	Première détection	Dernière détection	Total	Filtrés	Clients concernés [min;max]	Infos
☐	45280	ConfigurationItem.java:253 mergeAttributes()	SERVEUR	Ouvert	Inconnu		23/04/14 09:14:29	13/05/14 15:56:21	1933	119	[1 ; 119]	
☐	44068	BillingAccountBuilder.java:21 from()	SERVEUR	Ouvert	Inconnu		15/04/14 08:39:40	13/05/14 15:53:44	515	22	[1 ; 22]	
☐	44105	ChooseContractCommandHandlers.java:124 handle()	SERVEUR	Ouvert	Inconnu		15/04/14 10:19:21	13/05/14 15:54:11	168	17	[1 ; 17]	
☐	142	InjectorStepStartParcModification.java:49 process()	SERVEUR	Ouvert	Inconnu		29/10/13 14:00:03	13/05/14 13:00:11	7725	15	[1 ; 15]	
☐	44319	SE2KGetCustomerConnector.java:101 getNDWidthSpace()	SERVEUR	Ouvert	Inconnu		16/04/14 11:03:35	13/05/14 15:50:59	194	14	[1 ; 14]	
☐	44131	CatalogueContractRepository.java:69 get()	SERVEUR	Ouvert	Inconnu		15/04/14 11:12:42	13/05/14 15:43:43	222	11	[1 ; 11]	
☐	45281	TvingService.java:59 isAidEqualsToBssInternalAccountId()	SERVEUR	Ouvert	Inconnu		23/04/14 09:16:10	13/05/14 13:29:02	214	9	[1 ; 9]	
☐	44069	SoftRemoteServiceDispatcher.java:151 superProcessCall()	SERVEUR	Ouvert	Inconnu		15/04/14 08:47:48	13/05/14 15:46:48	220	8	[1 ; 8]	
☐	44180	AvailableOffersService.java:234 isResumeOrderNsd()	SERVEUR	Ouvert	Inconnu		15/04/14 13:50:43	13/05/14 15:00:19	152	8	[1 ; 8]	

A delicate subject must now come up...

(Persons of a delicate disposition are advised to cover their ears)

Bug reproduction!

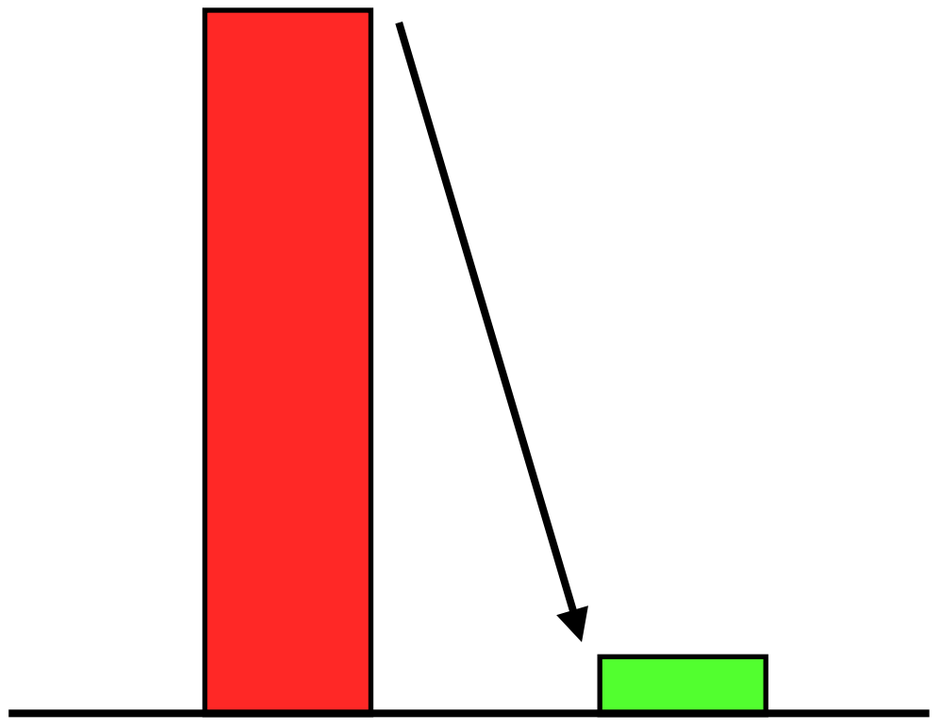


"Calopteryx virgo paarung" by Holger Gröschl - http://www.naturspektrum.de/ns1.htm. Licensed under Creative Commons Attribution-Share Alike 2.0-de via Wikimedia Commons - http://commons.wikimedia.org/wiki/File:Calopteryx_virgo_paarung.jpg#mediaviewer/File:Calopteryx_virgo_paarung.jpg

“Repro” the key to improving the process?

- Minimum time for a repro: 1/2 day...
- ...often stretching to a few days...
- ...sometimes up to several weeks!

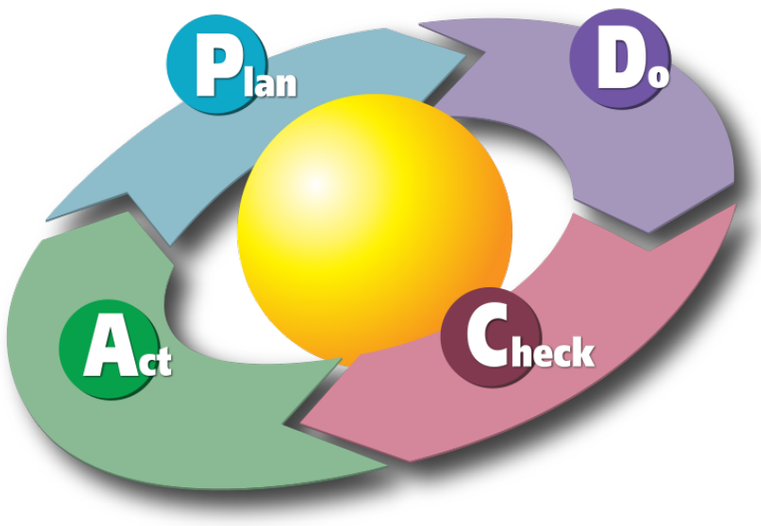
Setting goals for "repro" lead time



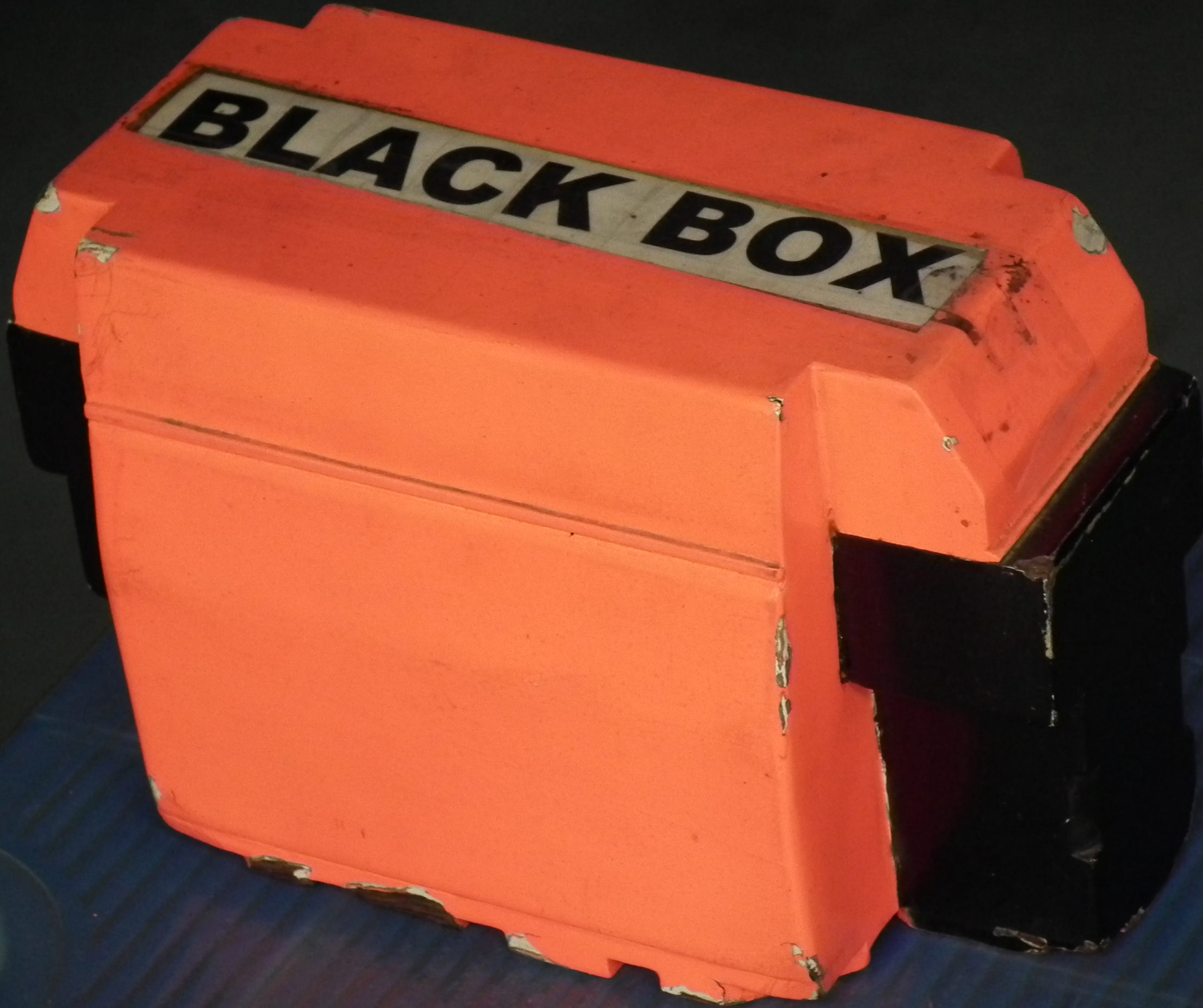
Current:
1/2 day to
weeks

Target:
5 min

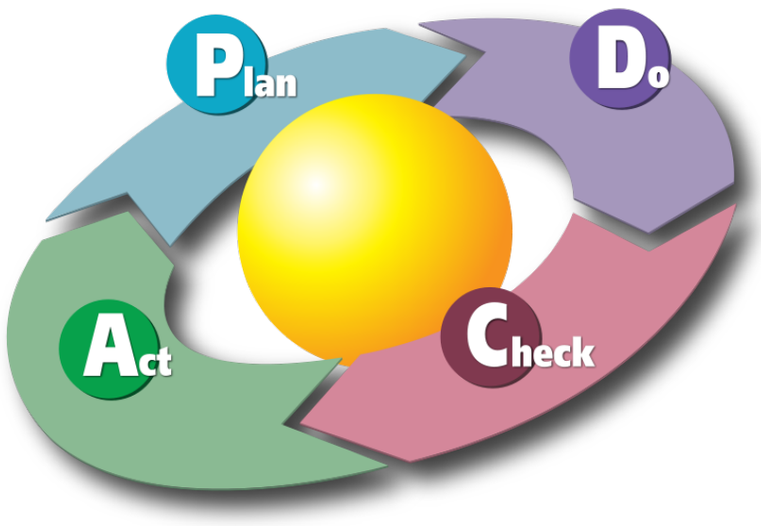
What's so hard about repro-ing defects?



Incomplete logging...


BLACK BOX

What's so hard about repro? Take 2...



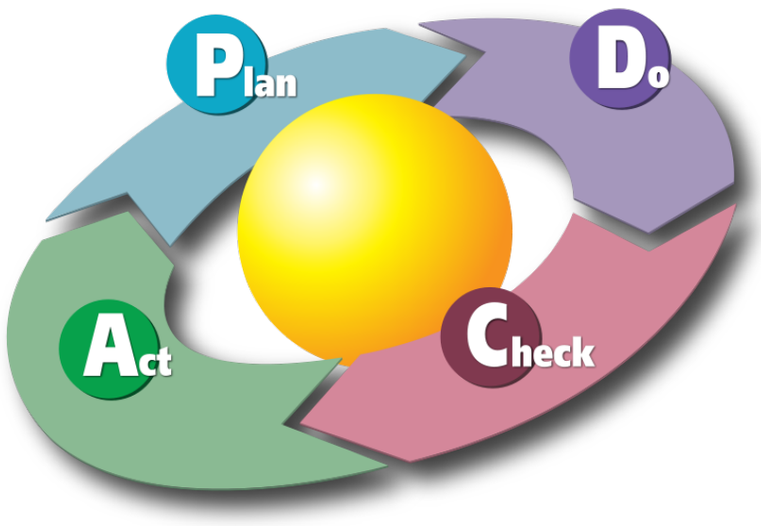
Standardized work: software defects

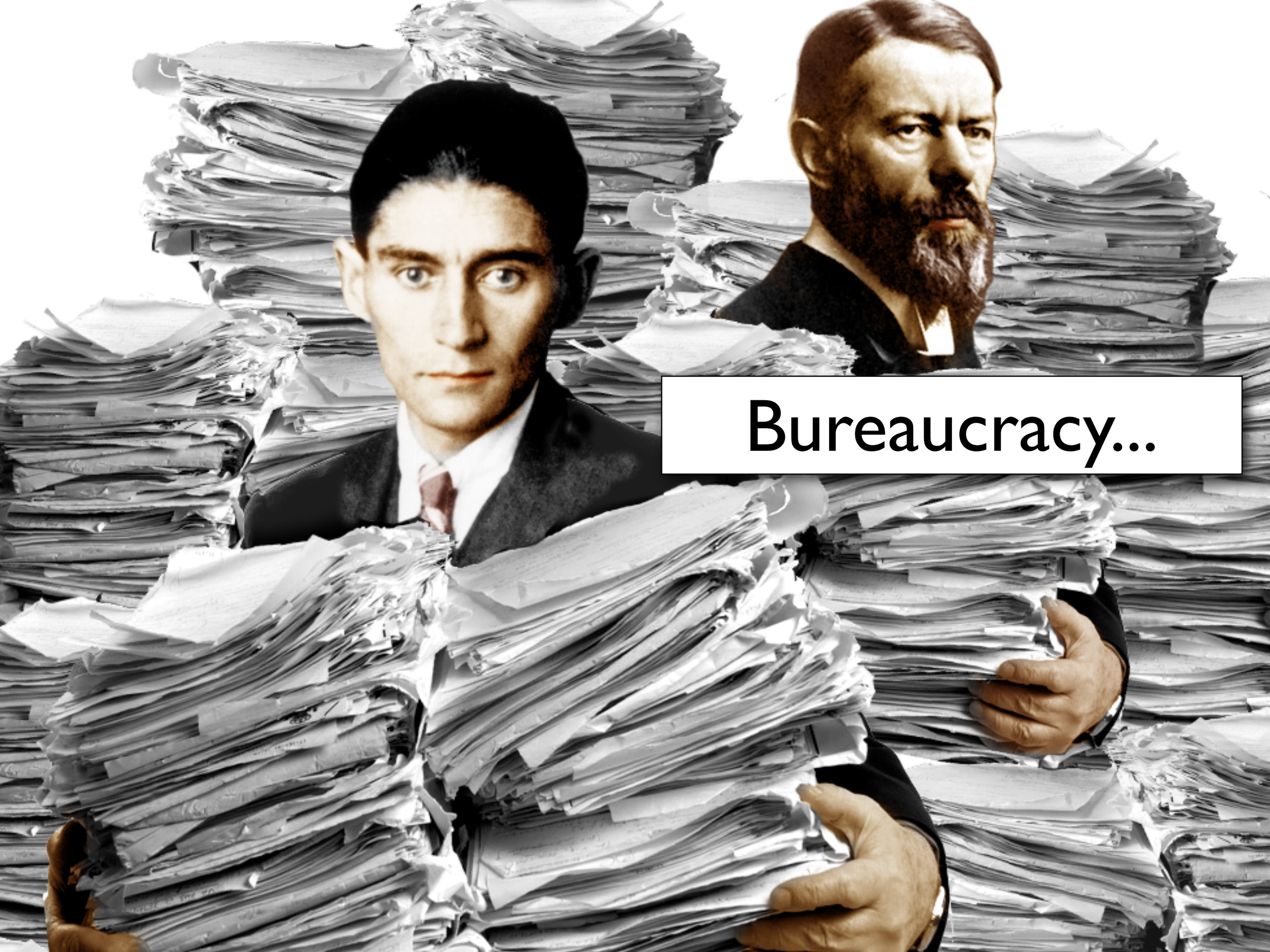
- Repro needs inputs identical to production:
  - same third-party inputs (web services)
  - same path through application
  - same configuration settings
  - same database version
  - same application version

Standardized work: software defects

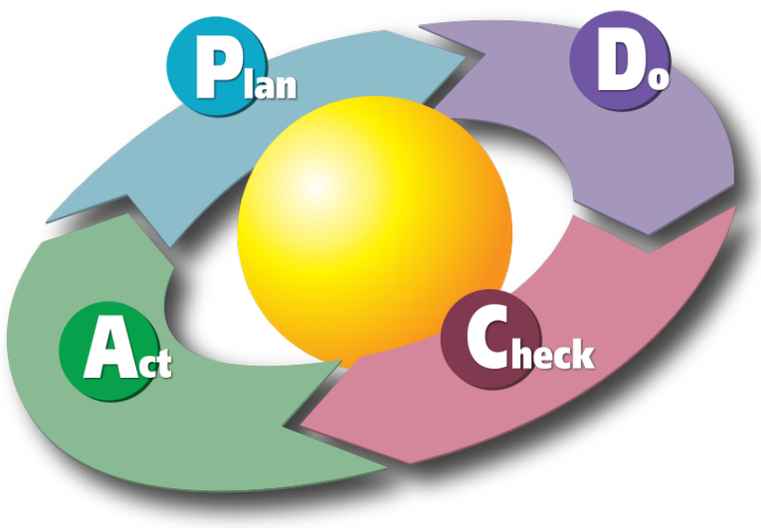
- After getting a good "repro" and only then:
  - identify causes (debugger, static analysis)
  - "necessary and sufficient conditions"
  - capture as an automated test

What's so hard about repro? Take 3...




Bureaucracy...

Why are test environments a scarce resource ?



Devops to the rescue!

Infrastructure as Code

Wednesday 17 October 12

http://bit.ly/jedi_iac

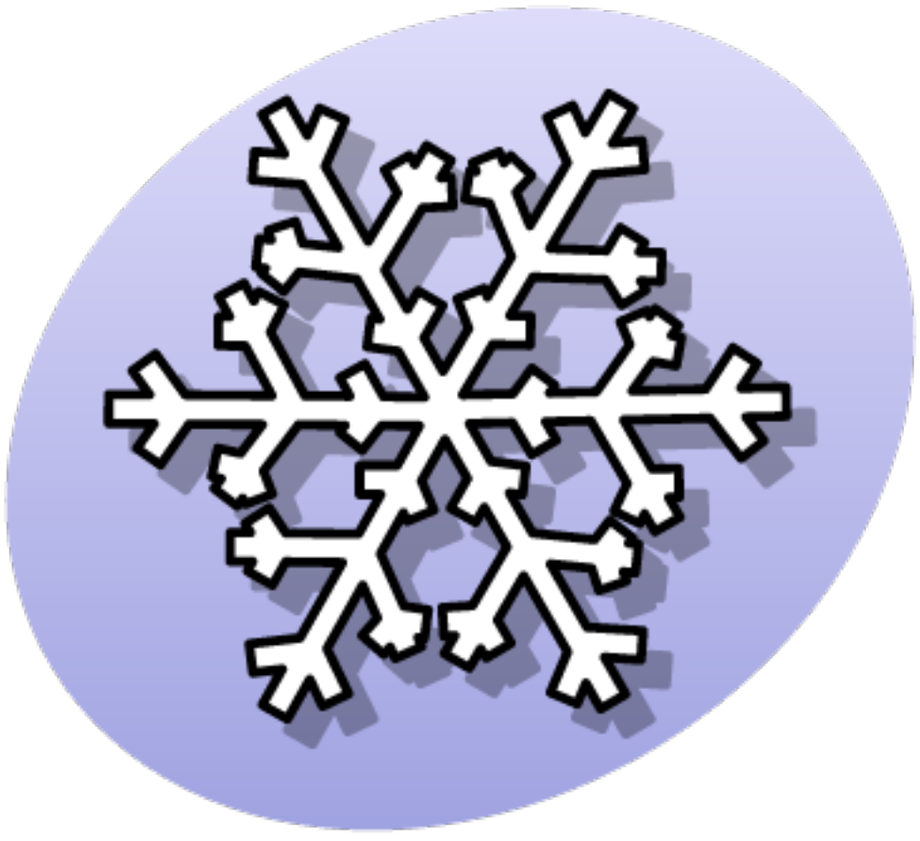
Infrastructure?

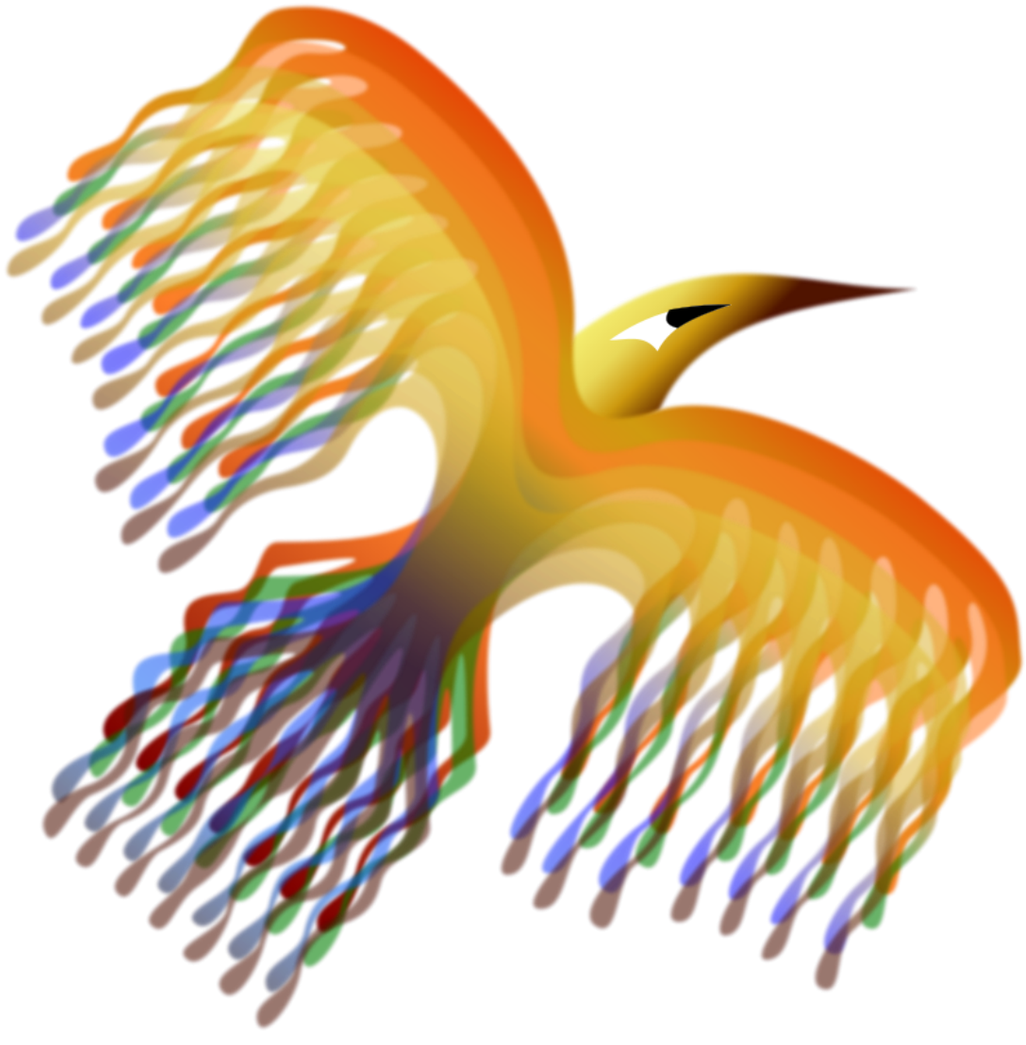
- Physical servers
- Virtual machines
- Network links
- Operating systems
- Application dependencies
- Application containers (e.g. JonAS)

“as code”?

- everything is a text file (no manual setup)
- under version control, with commit messages
- ideally with automated tests

Servers on demand

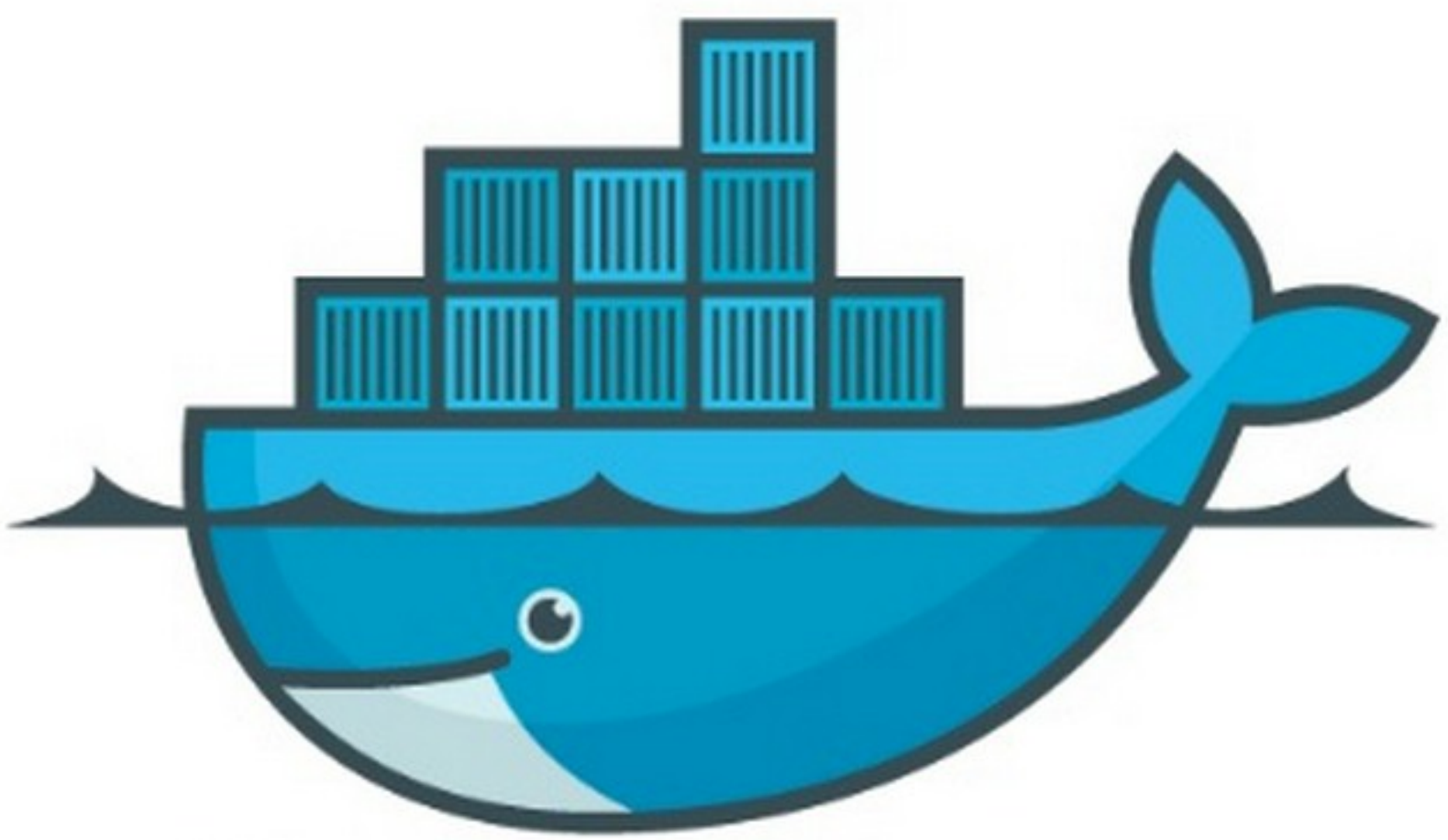




http://martinfowler.com/bliki/SnowflakeServer.html

http://martinfowler.com/bliki/PhoenixServer.html

docker.io



New tooling

orange SoftBuilder

dashboard	containers	settings

running Soft-CU instances:

Actions ▾ Create

Display All

Action	Version	Logs	Type	Catalogue	Profile	Note	Created	Status
	2.5.8.7	logs	mock	G94R02C3P36	standard	repro	Tue May 13 2014	Up 30 seconds
	2.5.10.1	logs	mock	G94R04C5P32	openVA15	Lionel	Tue May 06 2014	Up 7 days
	2.5.11_5	logs	mock	G94R04C4P16	open	Sabrina	Tue Apr 29 2014	Up 2 weeks
	2.5.10_6	logs	mock	G94R02C4P39	standard	testASM	Tue Apr 29 2014	Up 2 weeks

Adapted for Soft Commande Unique from DockerUI version: **v0.4** Docker API Version: **v1.8**

Chrome File Edit View History Bookmarks Window Help 11:14:10

Hacker Ne | SoftBuilder | SCiO: Your | Xonay Labs | The Ugly Hi | 7 simple st | My favorite | Three Grap | kernel | Résultats d

dvdsi220w.intranet-paris.francetelecom.fr/#/containers/

Apps | Reference | Read Later | MobileRead Forums | DVD | BitLyChauns | Send to OmniFocus | 3DPrintSw | Other Bookmarks

orange SoftBuilder

dashboard settings

running Soft-C

Actions Create

Display All

Action	Version	Log	d	Status
	2.5.8.4	logs	or 30 2014	Up 5 days
	2.5.11_5	logs	or 29 2014	Up 5 days
	2.5.10_6	logs	or 29 2014	Up 6 days
	2.5.8.3	logs	25 2014	Up 9 days

Adapted for Soft Commande Unique

Create Soft-CU instance

Start new instance

Version:

2.5.8.4

Catalogue:

- ✓
- prod
  - G94R02C3P36
- dev
  - G94R02C4P41
- dev2
  - G94R04C4P16
- preprod
  - G94R04C5P23
  - G94R04C5P32
  - G94R05C0P04

Create

First results...

- **Target of 5 minutes reached in "pilot" phase**
- Remaining challenges (technical)
  - bring more of the system configuration under version control
  - closer integration of the tools involved

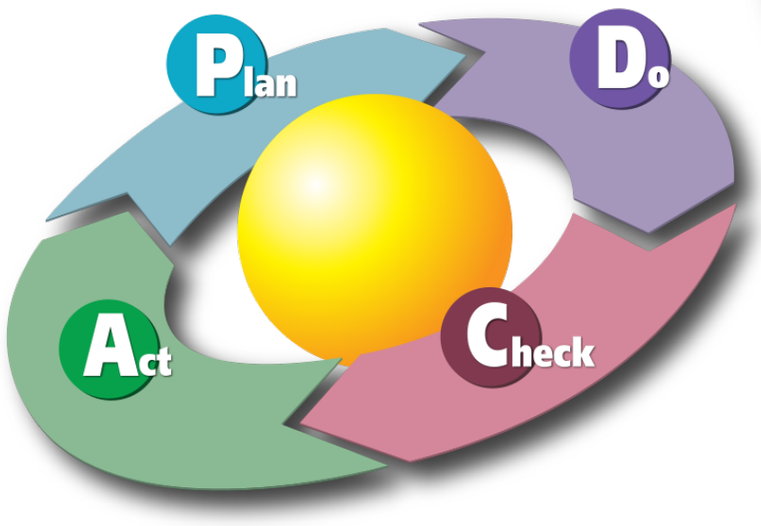
First results...

- Remaining challenges (non-technical)
  - reach 5 minutes consistently
  - align process with reality: count “red bin” defects as official bugs, proactively
  - apply “5 whys” to production bugs

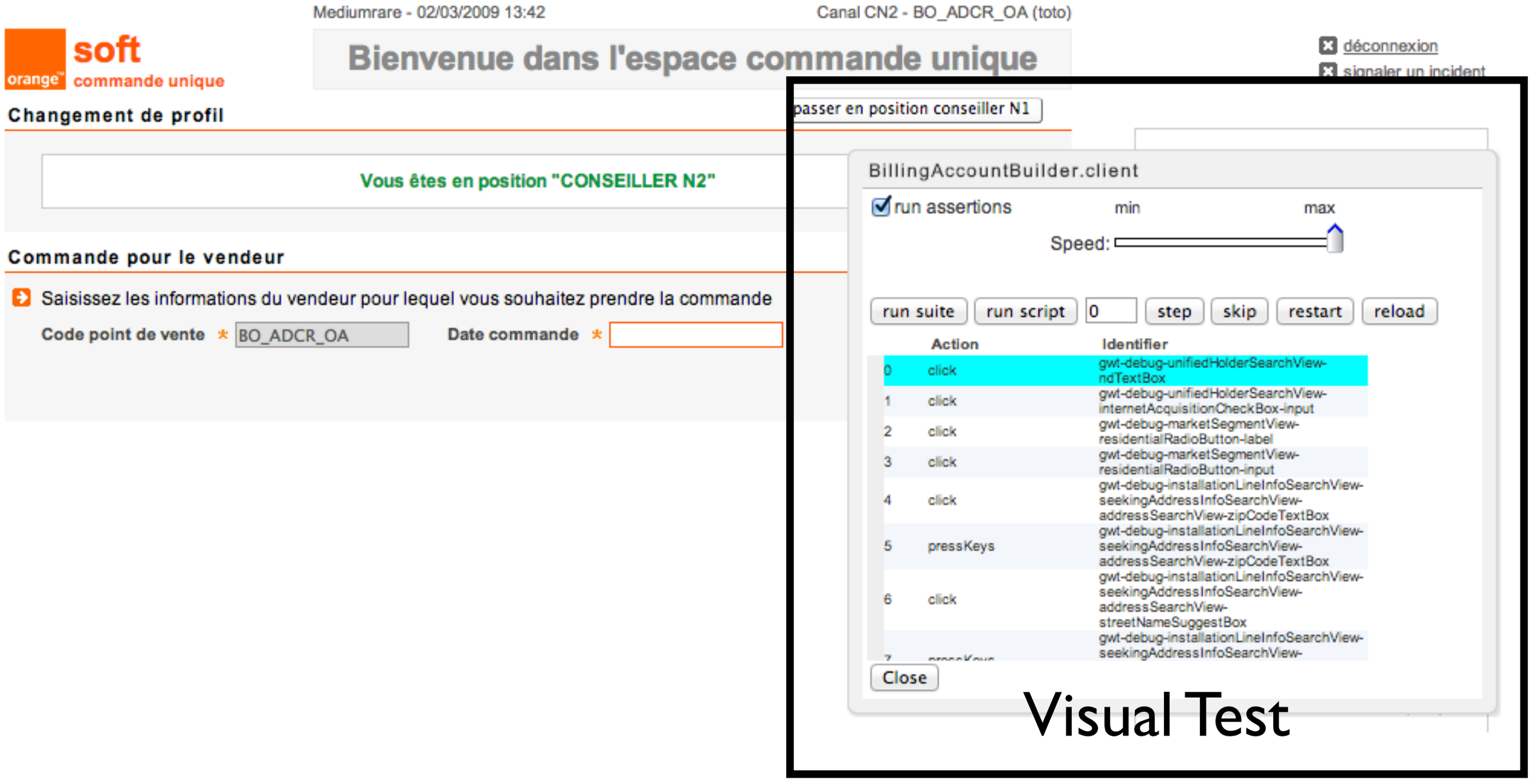
Most importantly...

- Dev and QA *really* collaborating :)

How do we streamline defect reproduction?

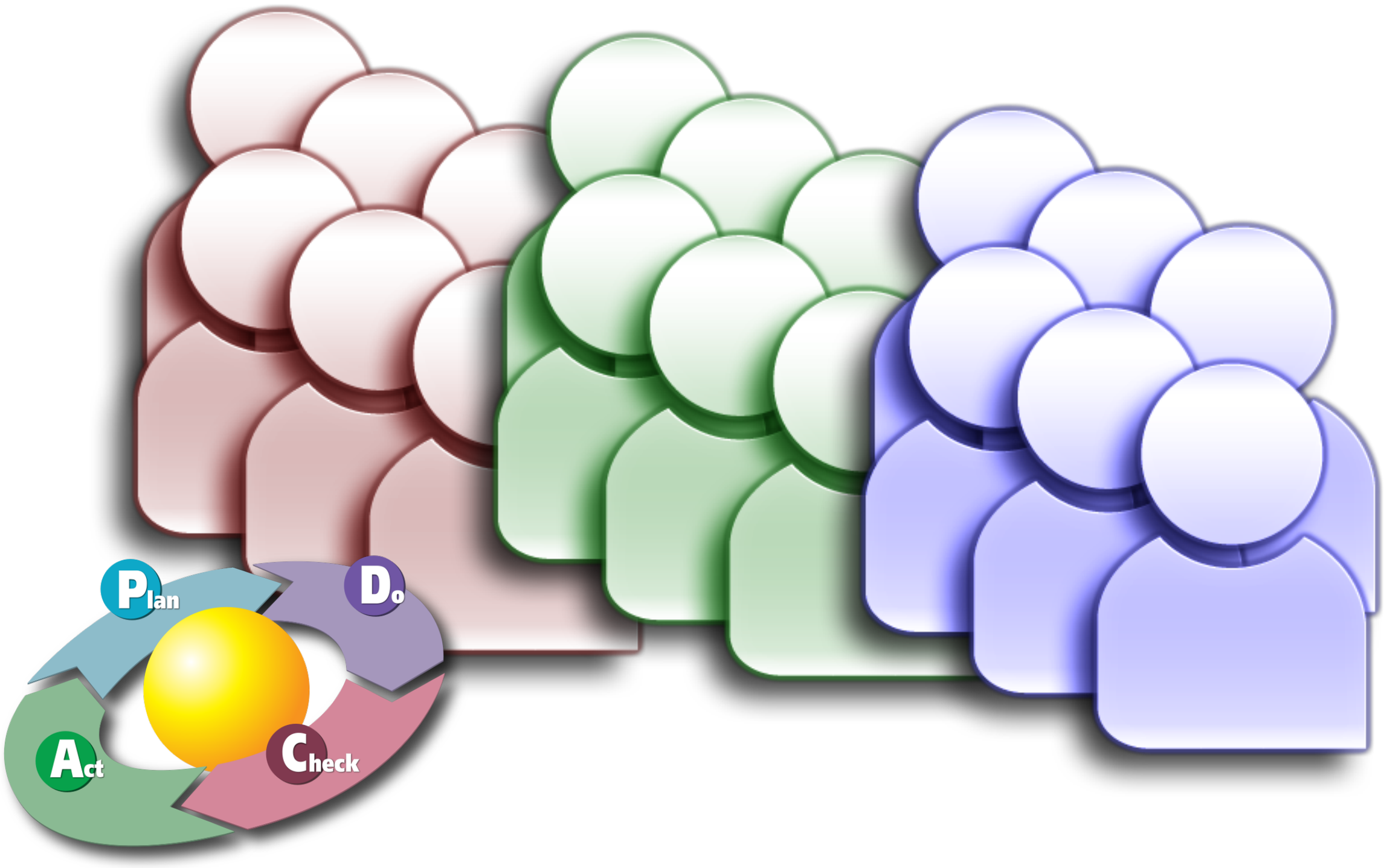


Sophisticated tooling



Visual Test

How do we get everyone to care about production defects?



How the story ends...

Merci!