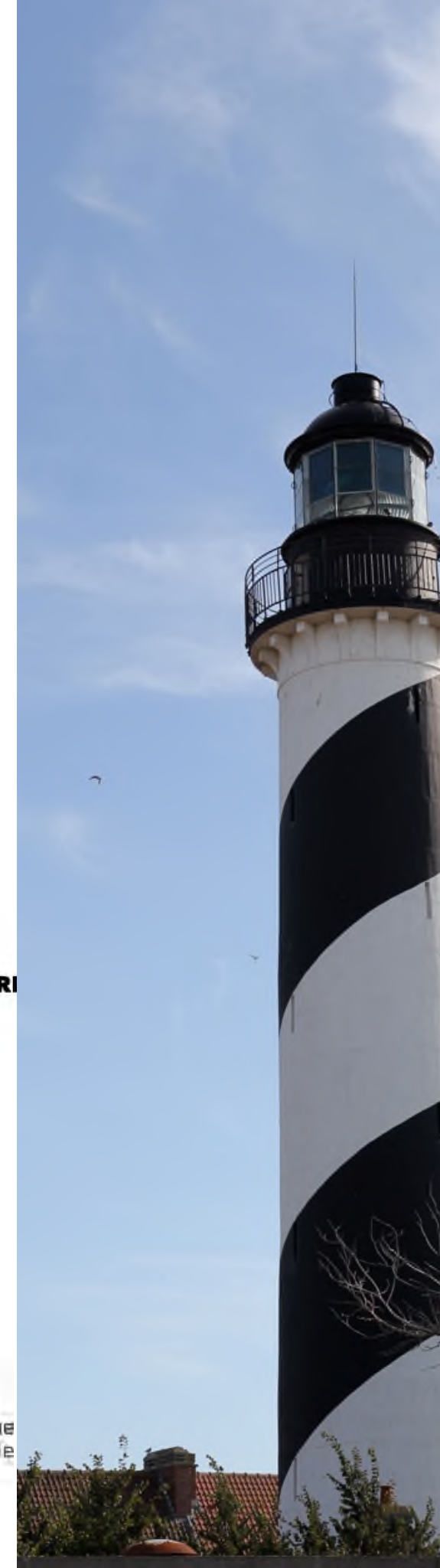


The background of the slide is a photograph of a lighthouse with a white base and a red upper section, set against a clear blue sky. Overlaid on the left side of the image is a large, stylized logo consisting of the letters 'S' and 'T' in a bold, blocky font. The 'S' is green with a red outline, and the 'T' is red with a green outline. They are both contained within a red hexagonal border.

Pharo: 10 years already and a shinning future

<http://stephane.ducasse.free.fr>

<http://www.pharo.org>





Thanks you!

Thanks you Tomohiro!

A word of presentation



Expert in language design

**Traits in Php7.0, Perl60
Influenced Traits in Scala**

Expert in maintenance

**Program analysis, Metamodels,
visualization, testing, refactorings,
metrics....**

synectique

Inventive Analysis

Building **specific** analysis tools for important running business software (Ada, Cobol, 4D, C, C++, Java...)

Dedicated tools to support decision making process

THALES



GENERALI
Solutions d'assurances

SIEMENS



moose

...

- LISP1996: discovered Smalltalk
- 1996:
- 1998: discovered Squeak
- ~2000: harvester for 3.xx, 3.6, 3.7, started to clean Squeak Responsible for Squeak3.9
- 2008: Pharo :)

Why Pharo?

Time travel...

**back to Smalltalk 2008 at
Buenos Aires**



I have a dream...

S. Ducasse stephane.ducasse@free.fr




INRIA & STIC Amsud (

Lifia)

Let's stop to live in a
museum!

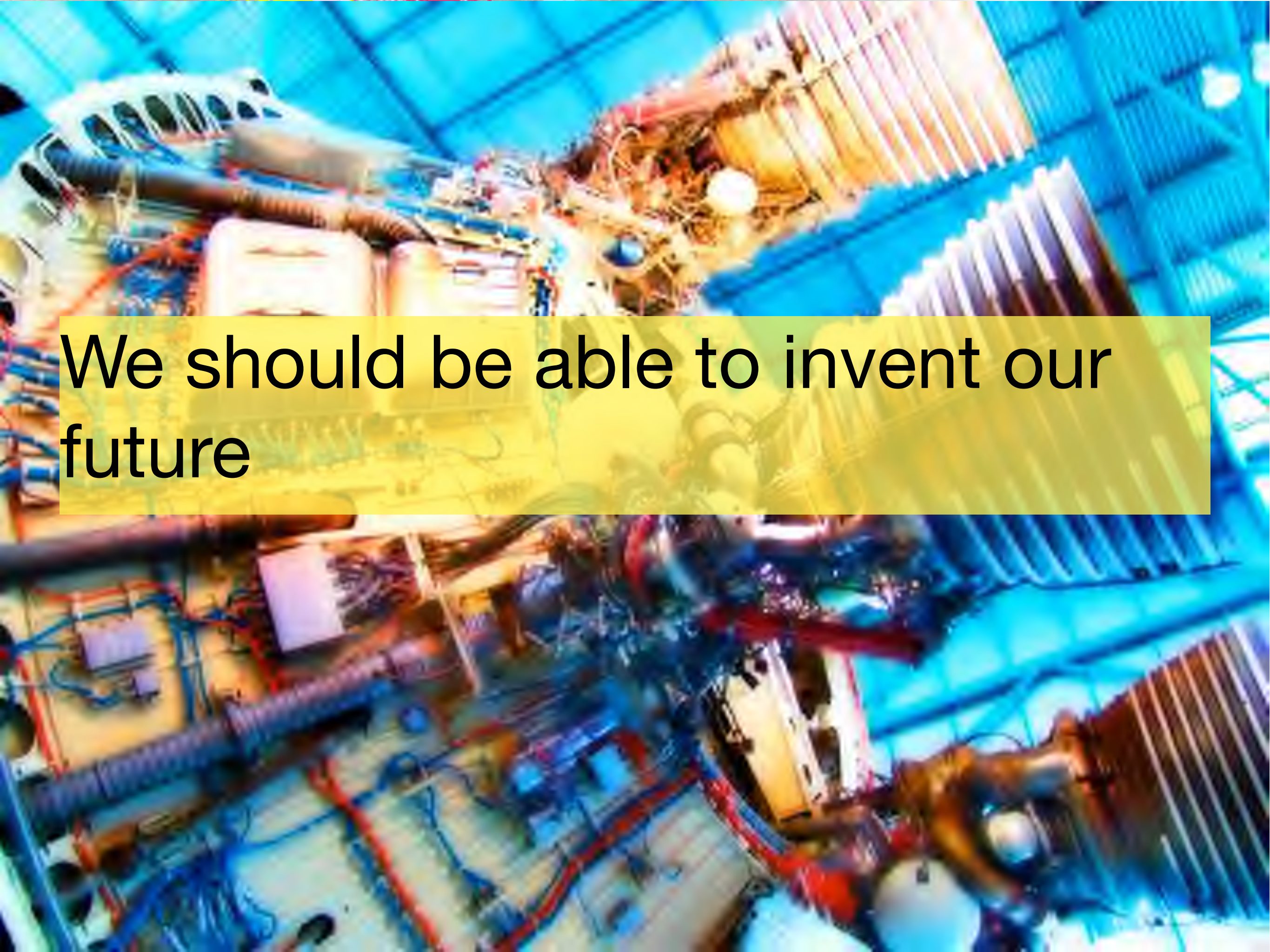




When do we ***really*** build on top of giant shoulders?

Thanks Dan and Alan. Now...

I want *more*!



We should be able to invent our future



When do we make sure that we could invent Smalltalk 3000?

first class instance variables, modules?, immutability bits?, visibility?,
image as cache?

The background is a light gray with a subtle, textured pattern. In the upper left quadrant, there is a cluster of colorful splatters in shades of yellow, pink, and blue. A faint, light gray outline of a human skull is visible in the background, centered horizontally and slightly below the middle vertically.

We need a new state of mind

Smalltalk as the language to define other languages

Advanced and stronger Mops

We deserve more than doesNotUnderstand:

New ways of defining languages

Domain specific language support

New generation of meta compilers

Software Engineering

Tests: which ones should I fix first?

Continuous test running

Smoother refactorings and code manipulation

Continuous integration / Extreme integration

Better Lint Rules / Domain specific lint rules

Bug tracking

UI

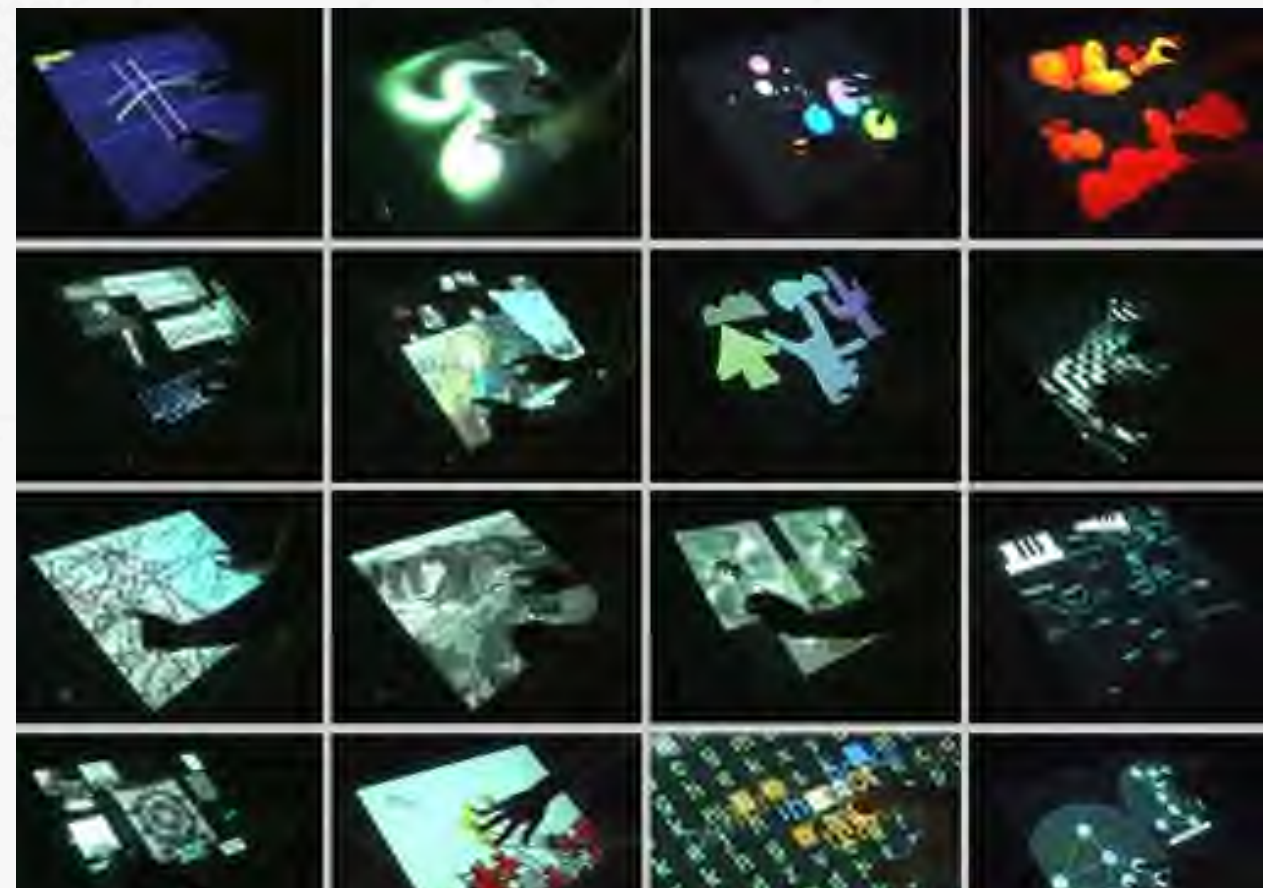
Multitouch support

New UI

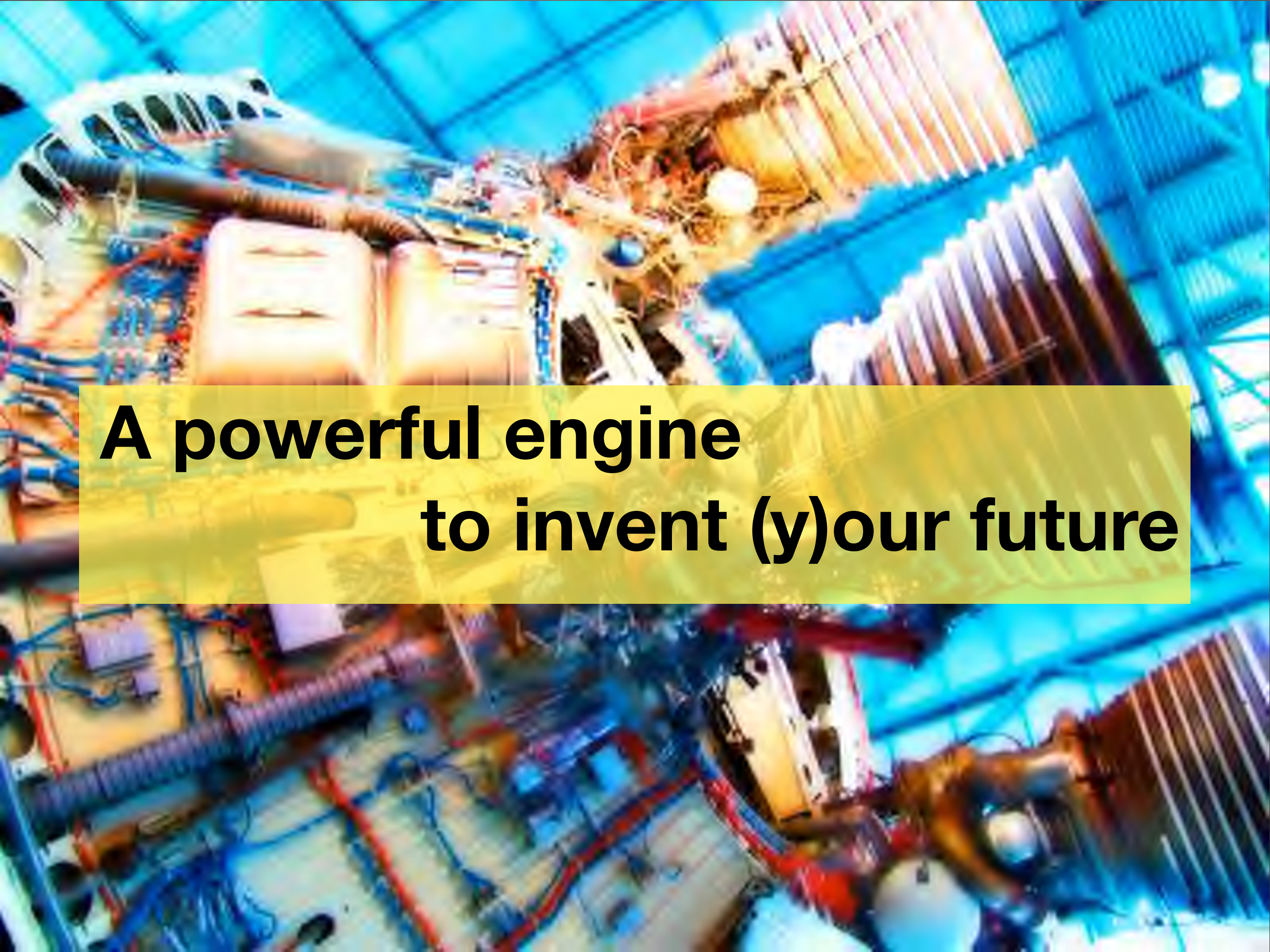
When will we be able to reinvent UI

Cairo and others?


New IDEs



Pharo's goals...



**A powerful engine
to invent (y)our future**



**An ecosystem where
innovation/business bloom**




**Super powerful live
programming language and
tools**

... that ****you**** can make money with Pharo.

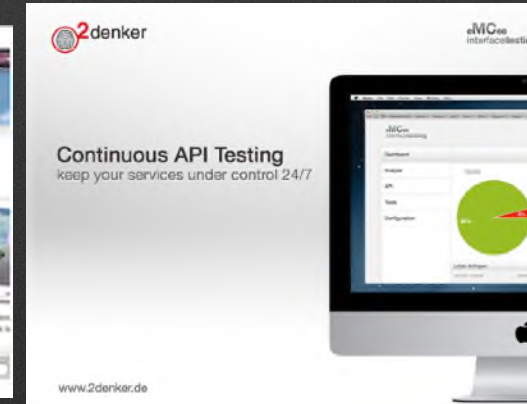
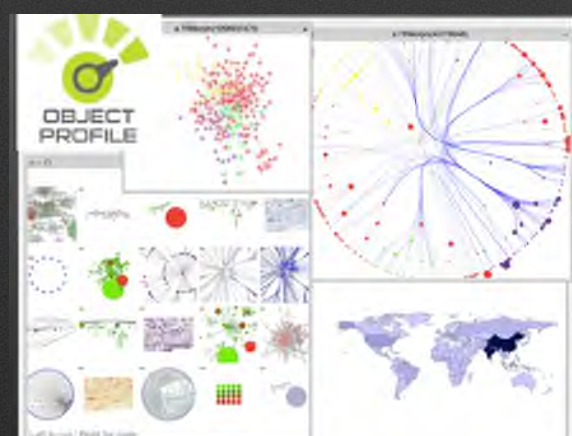
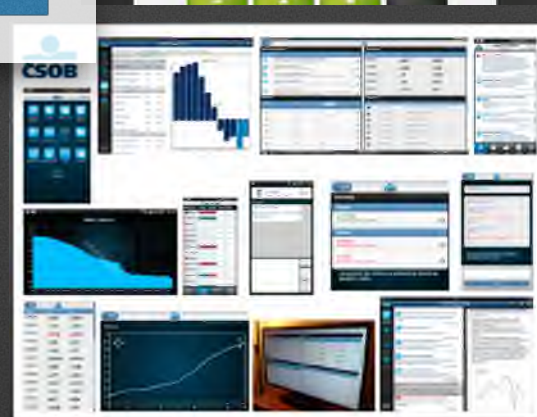
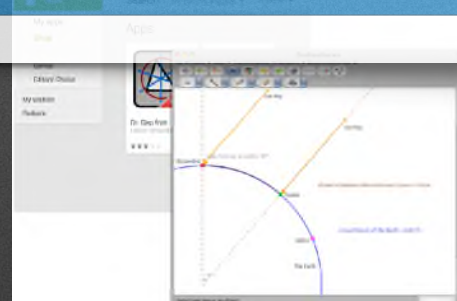
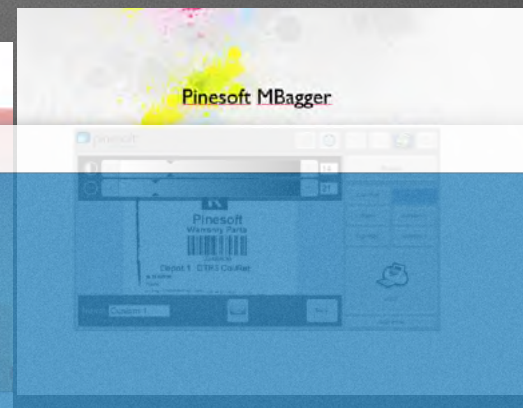
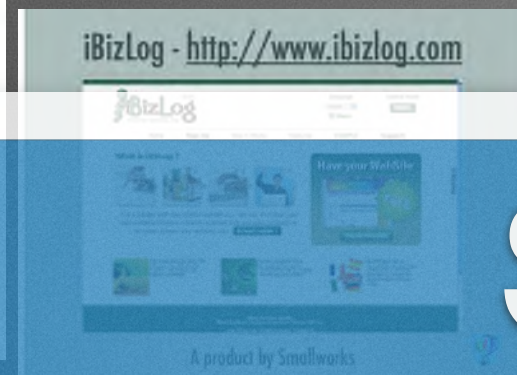
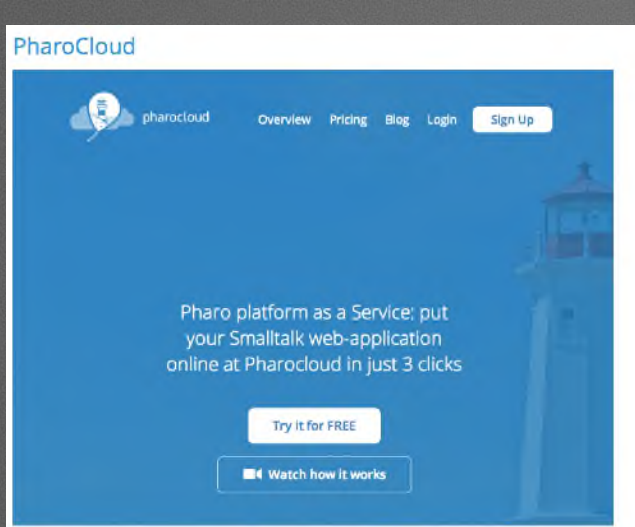
... to be able to invent solutions to existing problems.

... a powerful **innovative dynamic** language where we can build (y)**our** future.

Remember



**An ecosystem where
innovation/business bloom**



LAMRC

Back-End Wafer-Level Packaging



50% microprocessors
of your mobile/PC/tablet



The top image shows a close-up of a microprocessor being placed onto a green substrate. The bottom image shows a similar process, with a green substrate and a microprocessor being positioned by a robotic arm.

Your mobile hardware as
a high-chance to have
been produced by a
robot controlled via a
smalltalk



LAMRC

Back-End Wafer-Level Packaging

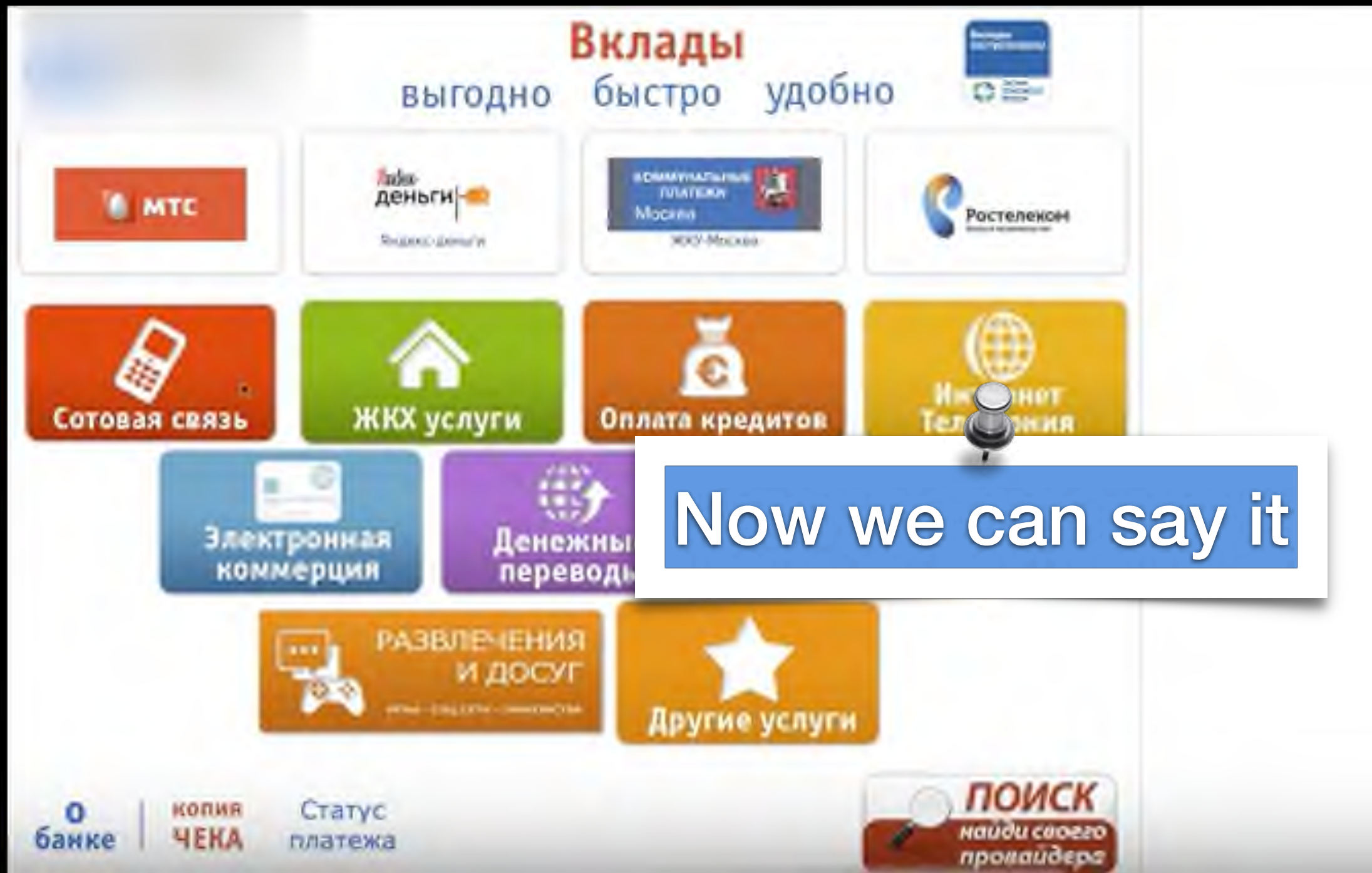


Your mobile hardware as
a high-chance to have
been produced by a
robot controlled via a
smalltalk

**Starting to experiment
with Pharo**



Pharo in ATM like Device in Moscow

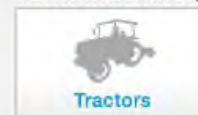


ALLSTOCKER

We find machines for you

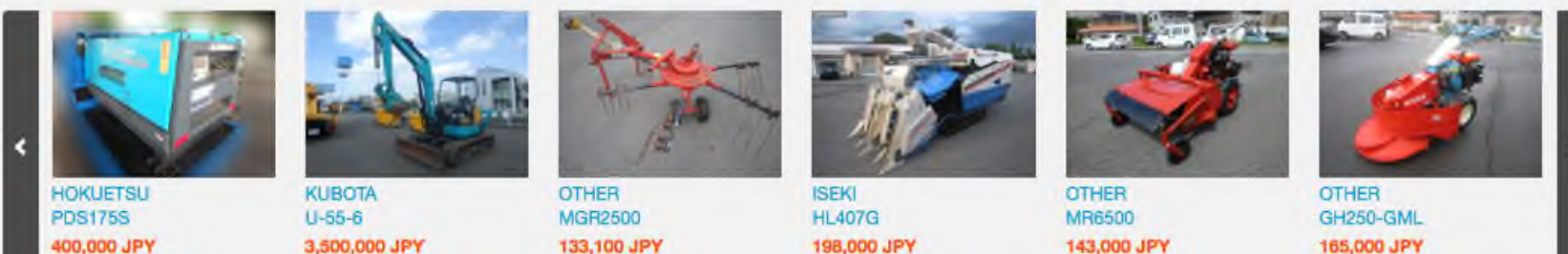
☎ +81-3-5847-8994

Asia's Largest Online Marketplace for Big Machines

Used by over **30,000** Companies Monthly**Online marketplace
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Enter a keyword (e.g. KOMATSU PC200)

Search

New Machines Updated on: 2016/09/13 17:46:18 (JST)[See More >](#)

Network Monitoring for small ISPs





pharocloud

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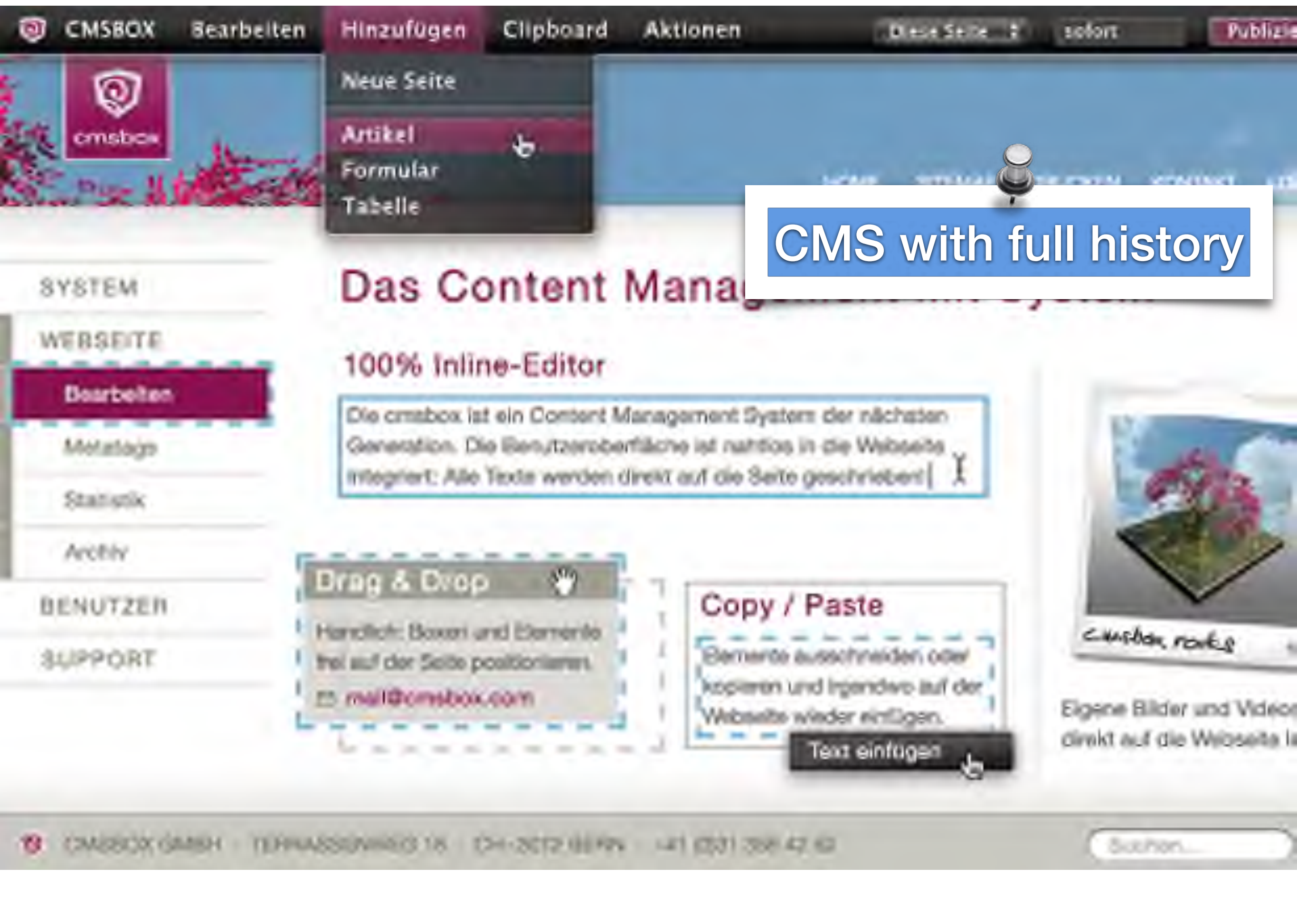
Pharo platform as a Service: put your
Smalltalk web-application online at
Pharocloud in just a couple clicks

[Try it for FREE](#)

[Watch how it works](#)

**Deploy Pharo
on the cloud in 3 min**





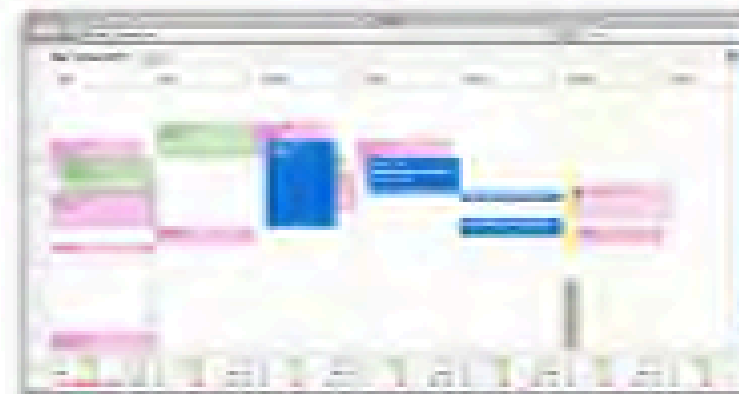
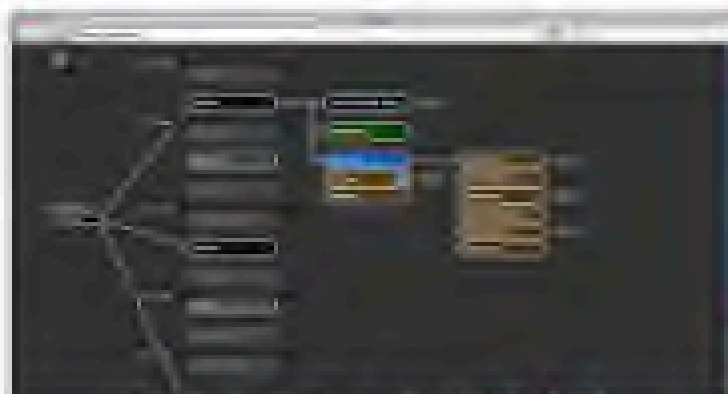
CMS with full history

Yesplan is veelzijdige software voor het efficiënt plannen van evenementen.

Yesplan is uiterst gebruiksvriendelijk, flexibel en makkelijk te koppelen met andere software.



Distributed
Resources
Management

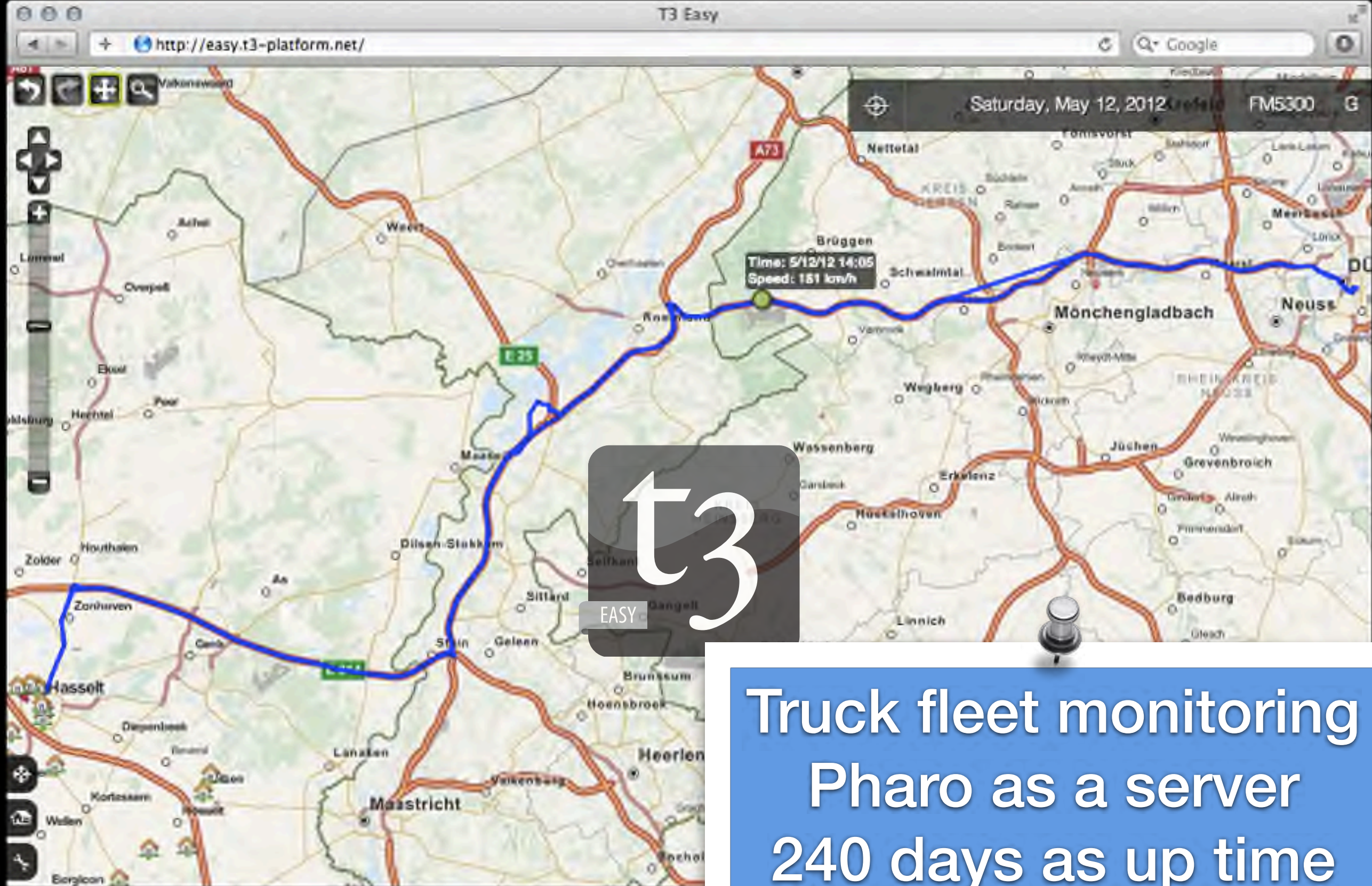


Server Testing

Continuous API Testing

keep your services under control 24/7

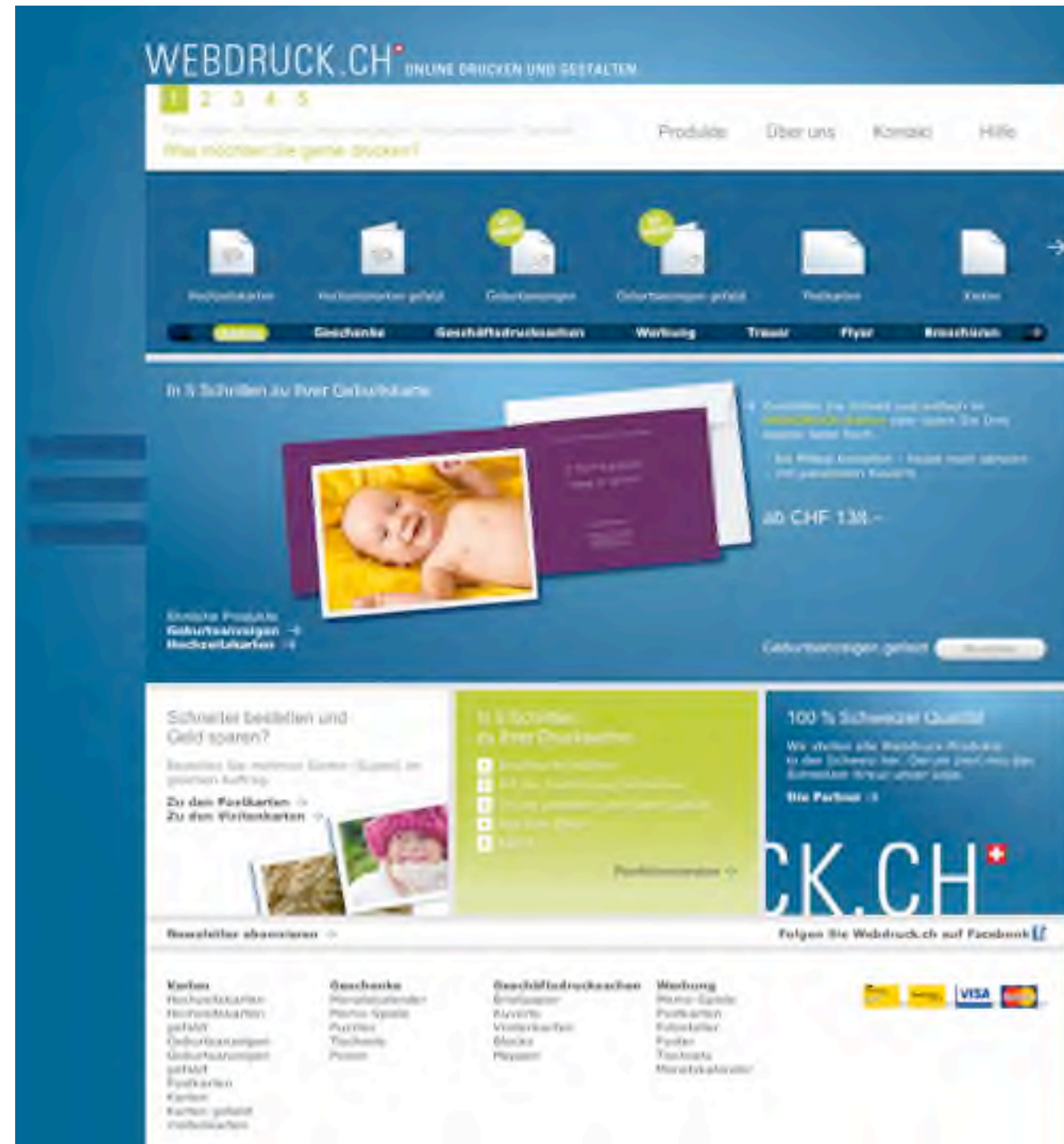




Truck fleet monitoring
Pharo as a server
240 days as up time

WEBDRUCK.CH Web-To-Print Solution

- Design and create individual printed matter
- eShop with credit card payment
- High quality PDF output with Printing Process integration
- Thousands of orders for seven Swiss printing companies



MobileTerminated ForwardSM

Do it
Print it

Free Software Mobile Communication solutions

```

plan: SCCPGlobalTitle npISDN;
addr: destGT;
translation: 0;
yourself);

yourself,

forwardSM := ASN1Dictionary new
  at: 'sm-RP-DA' put: (ASN1Dictionary new
    at: 'imsi' put: destIMSI toTBCD;
    yourself);
  at: 'sm-RP-OA' put: (ASN1Dictionary new
    at: 'serviceCentreAddressOA' put: sourceSMSC toE164;
    yourself);
  at: 'sm-RP-UI' put: (ByteArray readHexFrom: '240c91948148136542000005110712105534010c8320b6fd060005af3');
  yourself,
operationName := 'forwardSM',

dialogue := ZHLR endPoint newDialogue,

invoke := dialogue
  requestTcInvokeNamed: operationName parameters: for
  class: 1 timeout: 500,

invoke
  onReturn: [ ];
  onError: [ ];
  onReject: [ ];
  onReturnLast: [:result | ],

dialogue
  requestTcBeginDestinationAddress: imsiAddr
  originatingAddress: mscAddr
  applicationContextName: '0.4.0.0.1.0.25.2' asAsn1Oid .
  
```

Apply a display filter ...

No.	Time	Source	Destination	Protocol	Length	Info
1	0.000000	0	2000	GSM S...	130	Invoke forwardSM

Frame 1: 236 bytes on wire (1888 bits), 236 bytes captured (1888 bits) on Linux cooked capture

Internet Protocol Version 4, Src: 208.208.208.208, Dst: 208.208.208.208

Stream Control Transmission Protocol, Src Port: 3005 (3005), Dst Port: 3005 (3005)

MTP 3 User Adaptation Layer

Signalling Connection Control Part

Transaction Capabilities Application Part

GSM Mobile Application

GSM SMS TMSI (GSM 03.40) SMS-DELIVER

TP-REP: TP Reply Path parameter is not set in this SMS-SUBMIT/DELIVER

TP-UDHI: The TP UD field contains only the short message

TP-SRI: A status report shall be returned to the MS

TP-LP: The message has not been forwarded and is not a spawned message

TP-PM: No more messages are waiting for the MS in this SC

TP-MTI: SMS-DELIVER (0)

TP-Originating-Address - (491894315624)

TP-PI: 0

TP-OCI: 0

TP-Service-Centre-Time-Stamp

TP-User-Data-Length: (16) depends on Data-Coding-Scheme

TP-User-Data

SMS text: Hello from Piware

52 04 40 04 01 00 00 04 66 1e 20 1e 06 07 00 11 01000000 4-(.....

85 05 01 01 01 00 11 00 0f 00 02 07 00 01 00 06 00000000 00000000

07 04 00 00 01 00 19 02 6c 41 31 3f 02 01 01 02 00000000 1A,7.....

01 2e 30 37 00 00 02 02 43 09 10 91 50 09 04 00 00700000 00000000

91 94 51 97 10 00 00 00 04 21 24 0c 91 94 01 00 00000000 00000000

18 05 02 00 00 01 10 71 71 45 51 00 10 00 02 90 00000000 00000000

0d 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00000000 00000000

Programming environment for Programmable Logic Controllers

Software PLC
CIAA
IDE4PLC
powered by
Pharos

Board

POU

Board

EDU-CIAA-NXP

Picture

Program Organization Units (POU) editor

MAIN_PROG

VAR

Network 1

TEC1

TEC2

TEC3

TON

TIME

IN

Q

INT#10 - PT

ET - var0

LEDB

MUL

INT

EN

ENO

OUT

var0 - IN1

INT#2 - IN2

var1

EQ

INT

EN

ENO

OUT

var1 - IN1

INT#20 - IN2

LED2

POU Variable Declarations Editor

MAIN_PROG

Interface Variables

Category	Name	Datatype
VAR_INPUT	TEC1	BOOL
VAR_INPUT	TEC2	BOOL
VAR_INPUT	TEC3	BOOL


Internal and External Variables


Category	Name	Datatype
VAR	var0	BOOL
VAR	var1	INT
VAR	var2	TIME





NTed: disaster scenario recovery


NTed


 Darsteller

 Interaktionsschema


















 Verbindungsstatus

 Events

 Nachrichten

 Darsteller

+Neuer Darsteller

Darsteller	Verletzungsmuster	Interaktionsschema	tags	PIN	
Patient 1	Inhalationstrauma	Inhalationstrauma	SK I	EEGB	   
Patient 2	Verbrennungen 3. Grad	Verbrennungen 3. Grad	SK I	0MTH	   
Patient 3	Verbrennungen 3. Grad	Verbrennungen 3. Grad	SK I	VYW6	   
Patient 4	Offener Oberschenkel#	Offener Oberschenkel#	SK I	Z19K	   
Patient 5	KoplaWu + SHT 1°	KoplaWu + SHT 1°	SK II	G7DE	   
Patient 6	Verbrennungen 2°	Verbrennungen 2°	SK II	WM4G	   
Patient 7	Schürfwunde	Schürfwunde	SK III	1S5T	   
Patient 8	Schürfwunde	Schürfwunde	SK III	EY0L	   
Patient 9	Betroffener	Betroffener	SK III	MUJS	   
Patient 10	Betroffener	Betroffener	SK III	SMB3	   
Patient 11	Betroffener	Betroffener	SK III	W5UR	   

iBizLog - <http://www.ibizlog.com>



A product by **Smallworks**



Apps

My apps

Shop

Games

Editors' Choice

My wishlist

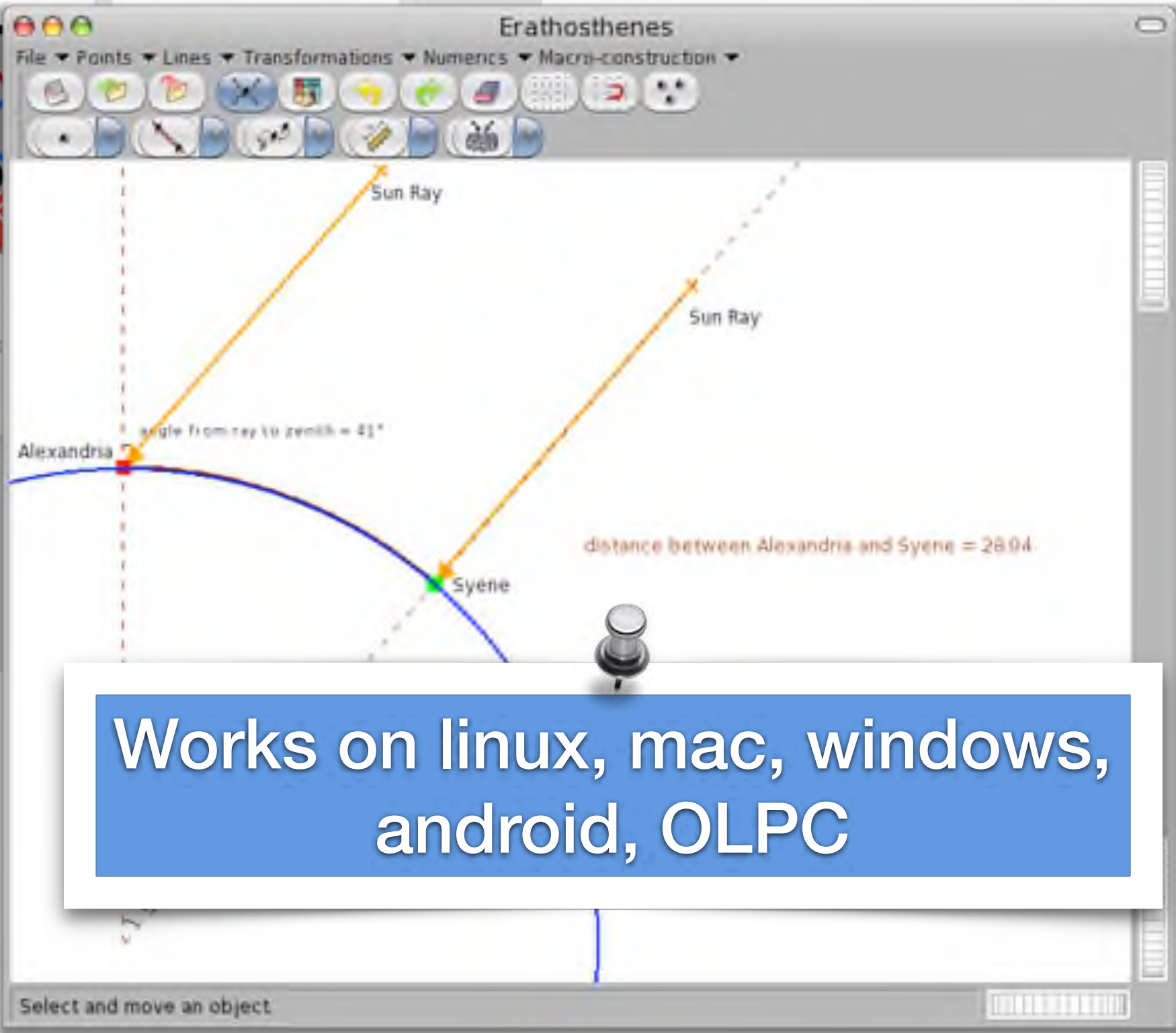
Redeem

Apps



Dr. Geo free

Hilaire Fernandes



Works on linux, mac, windows,
android, OLPC



[About](#)[Download](#)[Tools](#)[Docs](#)[Events](#)[News](#)

Moose is a platform for software and data analysis.

It is an open source project since 1996. It is supported by several research groups around the world, and it is increasingly adopted in industrial projects.

[Download 4.7](#)[The Moose Book](#)

enables

**Humane
assessment**

*the missing software
engineering method*

[Call for help: webpage redesign](#)

29 April 2013

We are starting a project to redesign the Moose webpage. The initial goals of the redesign are: * ...

[Moose 5.0 roadmap](#)

13 April 2013

A summary of the talk laying out the Moose 5.0 roadmap can be found at: <http://www.humane-assessment...>

[Moose 4.8 development: 4045 green tests](#)

20 March 2013

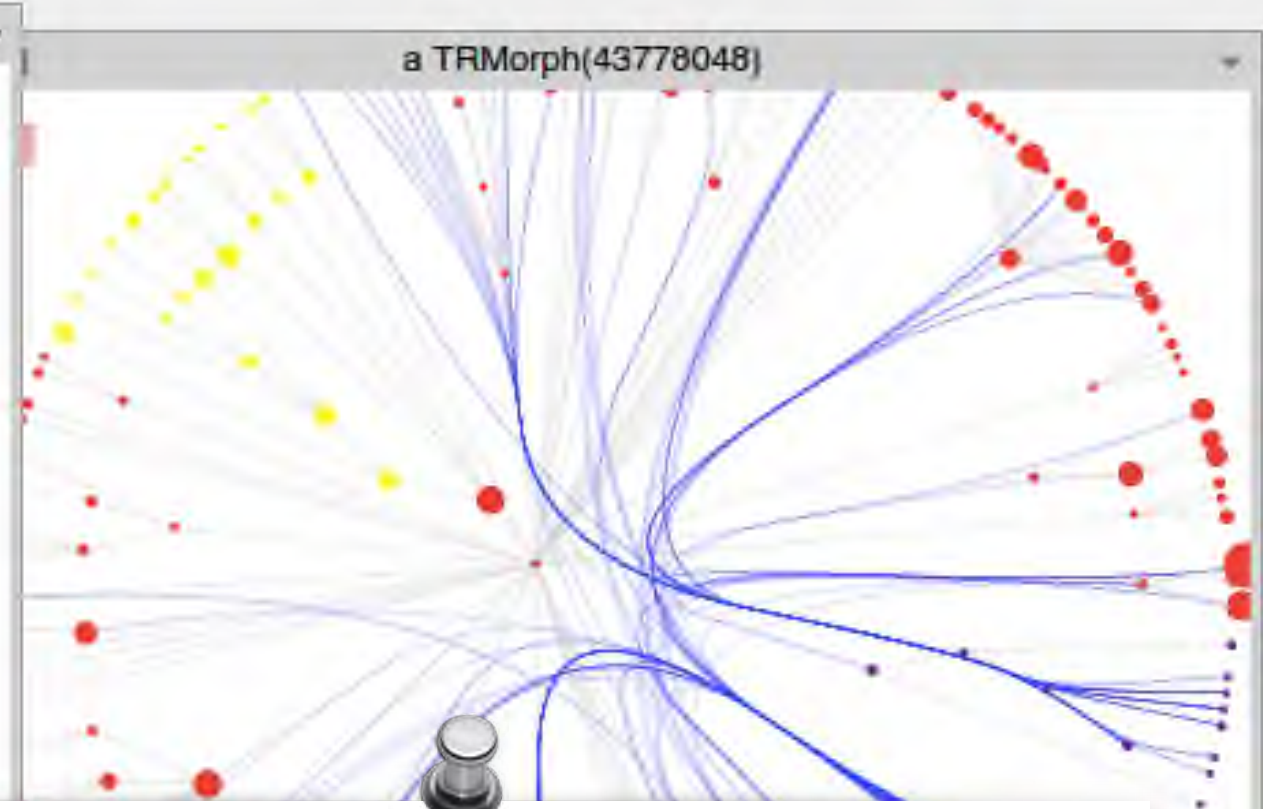
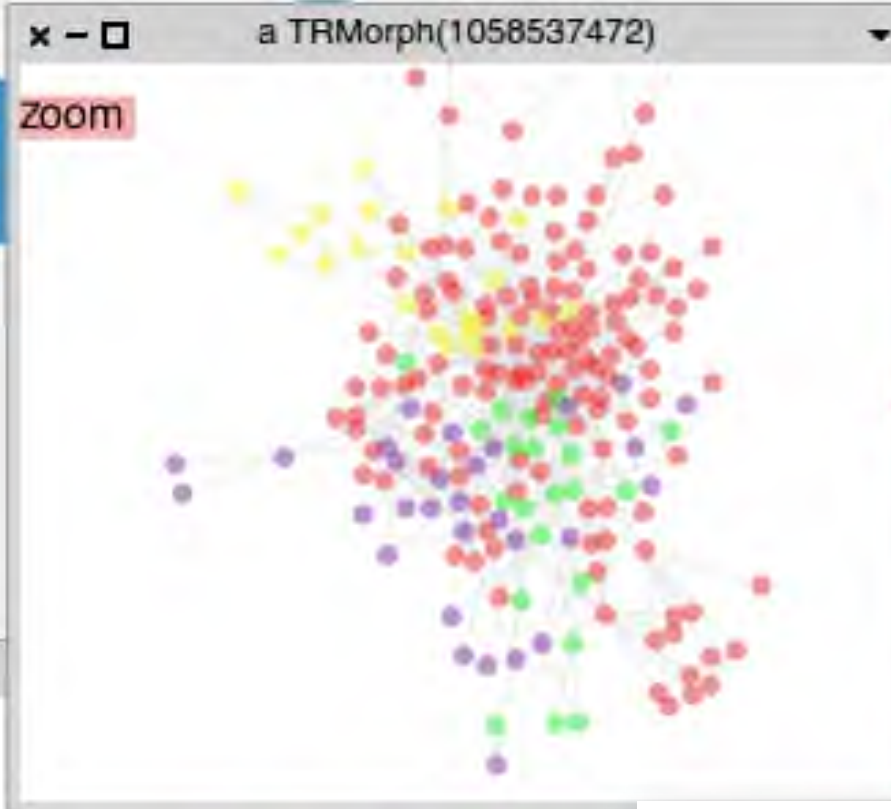
The move from Pharo 1.4 to Pharo 2.0 is finally complete: all 4045 tests are green. The continuous ...

**Sophisticated analysis platform
more than 200 men/years**

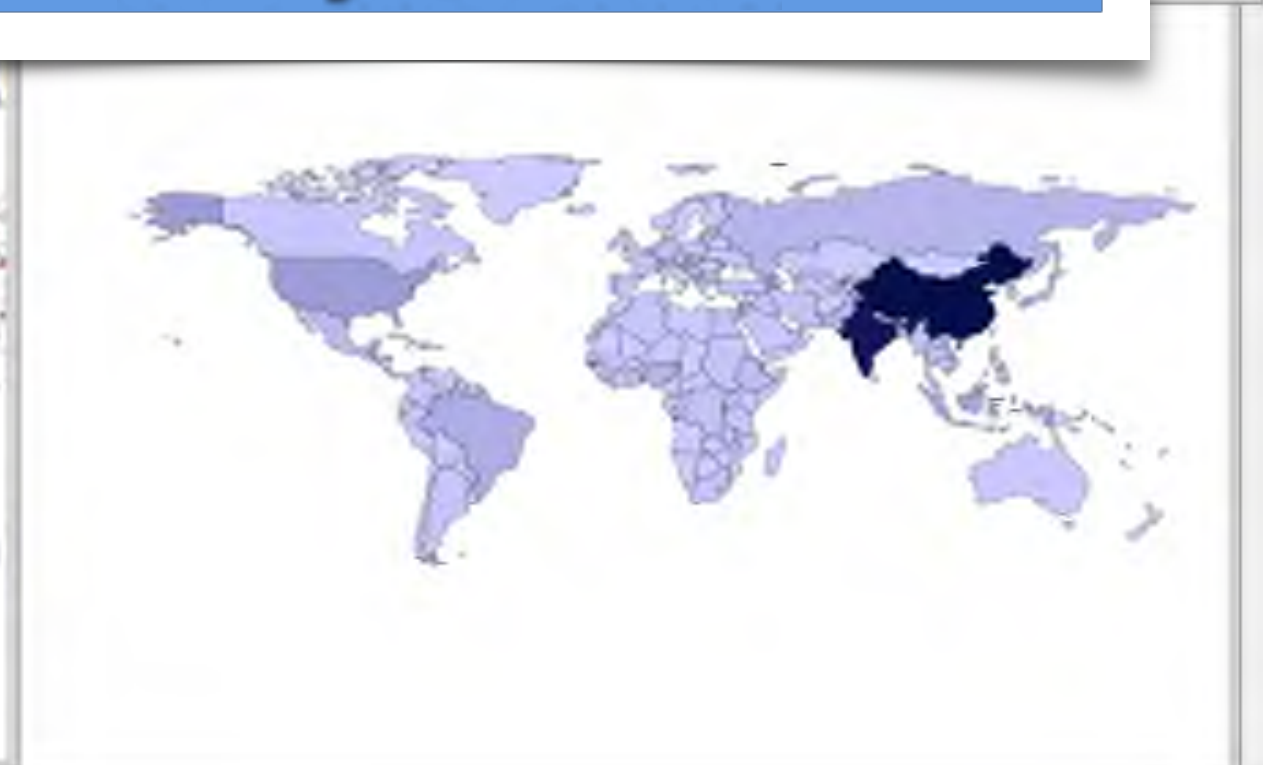
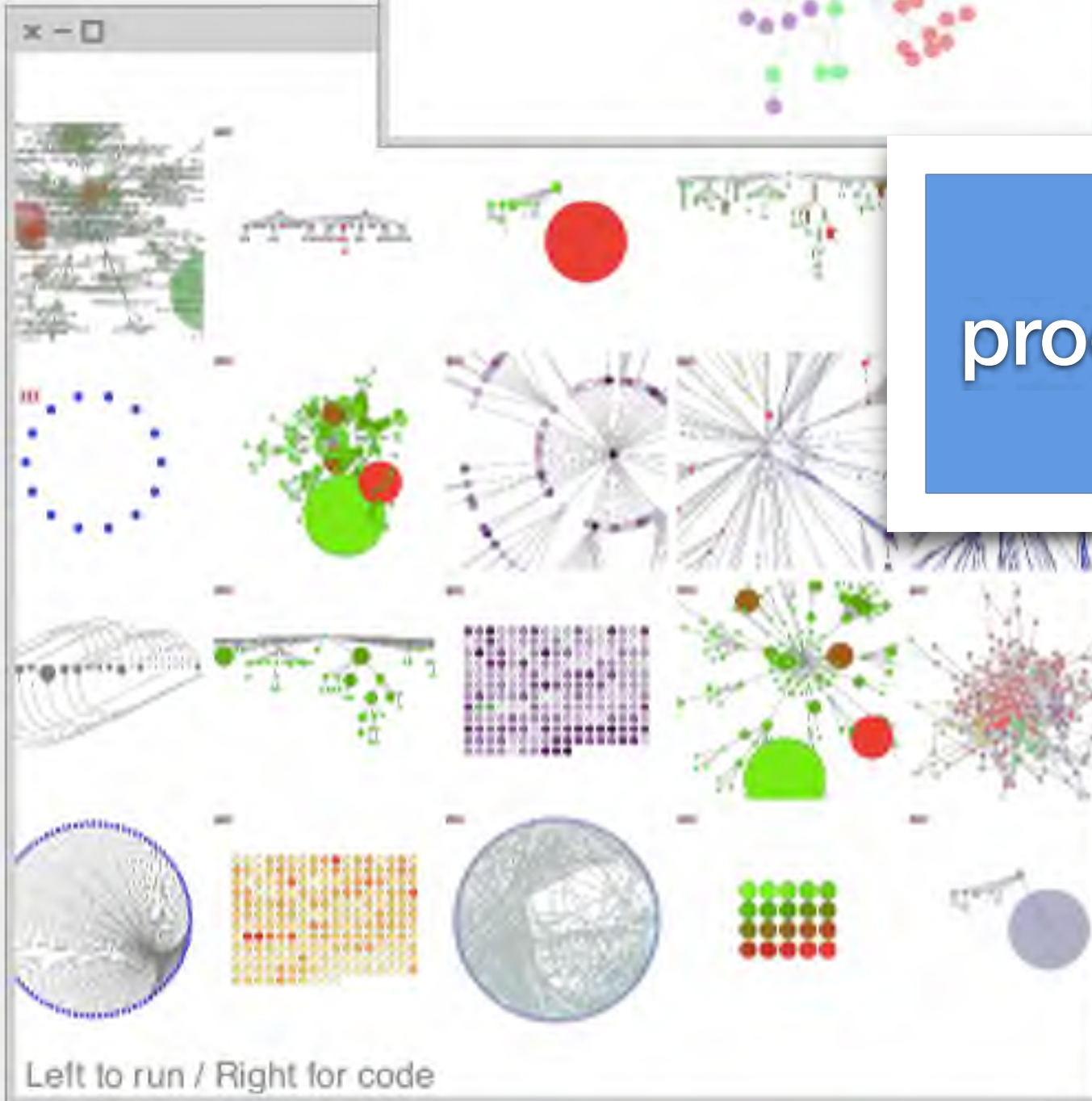
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Pha



ObjectProfile
produces visualizations &
analysis tools



The world's first online platform fully supporting risk-based test management.

- Your IT is critical to your company.
- Would you dare not to control your risks and neglect the possible impact for your company and customers?
- Start controlling your risks in a standardized and easy way !!!

▶ **FREE TRIAL**

1 BETTER

NORIZZK.COM guides you in composing the most effective and efficient end-to-end test strategy, starting from identified product risks. It helps you focus on the critical aspects of your projects and products.

NORIZZK.COM is the only platform for risk based test management showing you a comprehensive and visual overview on the risk status of your project.

▶ **YOUR ADDED VALUE**

2 FASTER

NORIZZK.COM is the fastest way to compose your master and detailed test plan. It comes with a predefined knowledge base containing best practices for building your test plan, thus giving you a head start.

NORIZZK.COM allows sharing and reusing knowledge and experiences from previous projects. Over time, **NORIZZK.COM** becomes smarter in guiding you since it is self-learning and continuously improves its best practices.

▶ **YOUR ADDED VALUE**

3 CHEAPER

As from now, wasting time and money by re-inventing the wheel is history. **NORIZZK.COM** gives you significant savings in creating your test plans.

It provides an intelligent and complete approach for all test managers. **NORIZZK.COM** contains sustainable testing intelligence that can easily be maintained.

▶ **YOUR ADDED VALUE**

COMPONENTS



Risk Assessment

Identify, categorize, prioritize and mitigate your risks with one single tool.



Test strategy

Write your master and detailed test plan in a faster way.



Test Estimations

Estimate all the required testing effort on one single page.



Test Results

Capture all the test results to monitor the progress.



Reporting

Monitor the progress using the Risk



Export

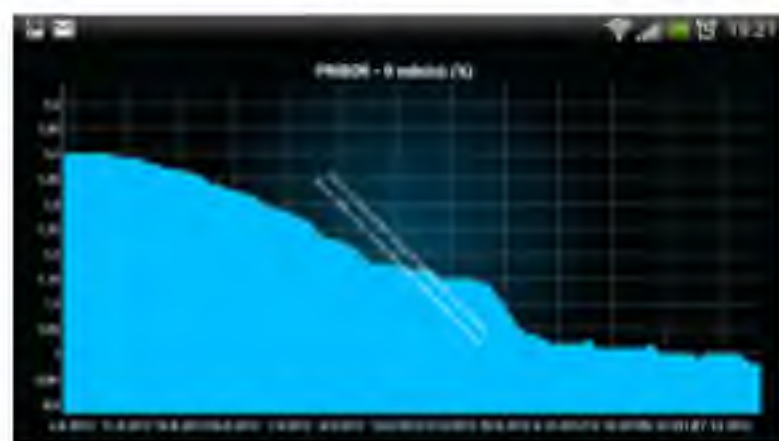
Export your test plan to a docx file.



Business Intelligence

Discover intelligence in your testing

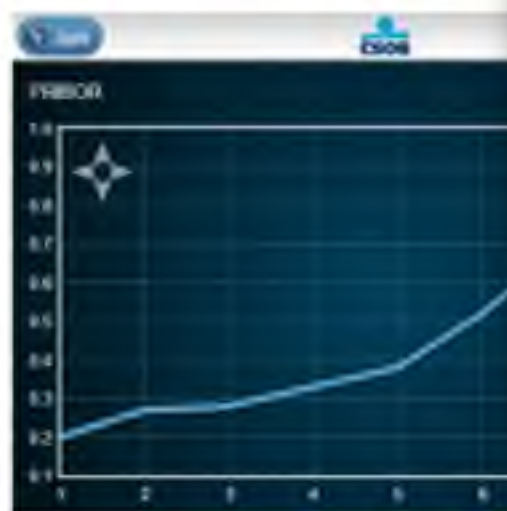
▶ **LEARN MORE**



Instrument	Value	Change
EUR/USD	1.05	+0.00
USD/CHF	0.85	-0.01
GBP/USD	1.55	-0.02
JPY/USD	110.00	+0.50
AUD/USD	0.75	-0.01
NZD/USD	0.65	-0.01
EUR/GBP	0.68	-0.01
EUR/JPY	115.50	+0.50
EUR/AUD	1.25	-0.01
EUR/NZD	1.05	-0.01



Instrument	Value	Change
EUR/USD	1.05	+0.00
USD/CHF	0.85	-0.01
GBP/USD	1.55	-0.02
JPY/USD	110.00	+0.50
AUD/USD	0.75	-0.01
NZD/USD	0.65	-0.01
EUR/GBP	0.68	-0.01
EUR/JPY	115.50	+0.50
EUR/AUD	1.25	-0.01
EUR/NZD	1.05	-0.01



Developed in 3 months one dev
Sold to another bank
Java team estimated 2 years



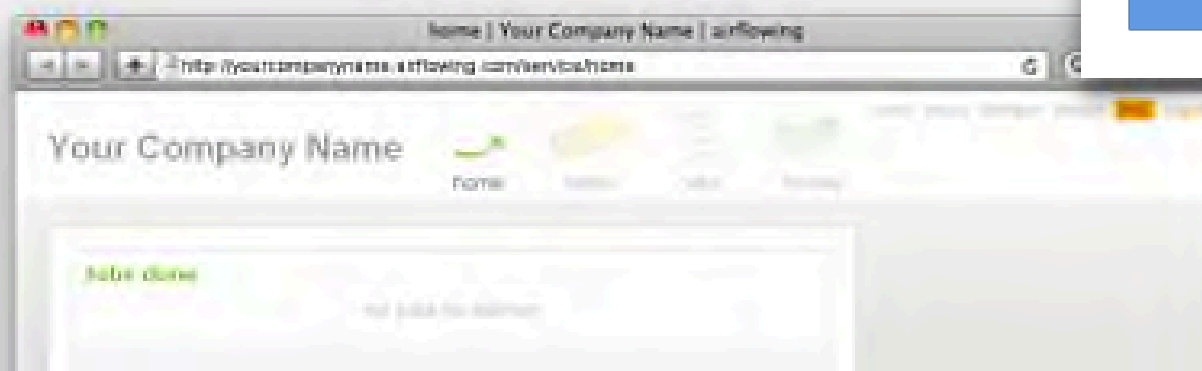
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Sales, tasks and finances: your team and all that's essential **in one place**

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Deployed business model
did not work



simple way

Take the pain away from your organization needs.

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Offline - Leave a message

Can develop a complex analysis in 3 months

Dedicated and cost-effective tools for software evolution



Dedicated Analyses

Synectique offers business intelligence tools for your



Dedicated tools

Synectique offers tools *fine-tuned to your software analysis needs*



Decision making

Synectique tools provide *answers that lead to concrete decisions*



Manage travel costs

Spesenfuchs

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Pioneering new ways of maximising sustainable wind energy yields

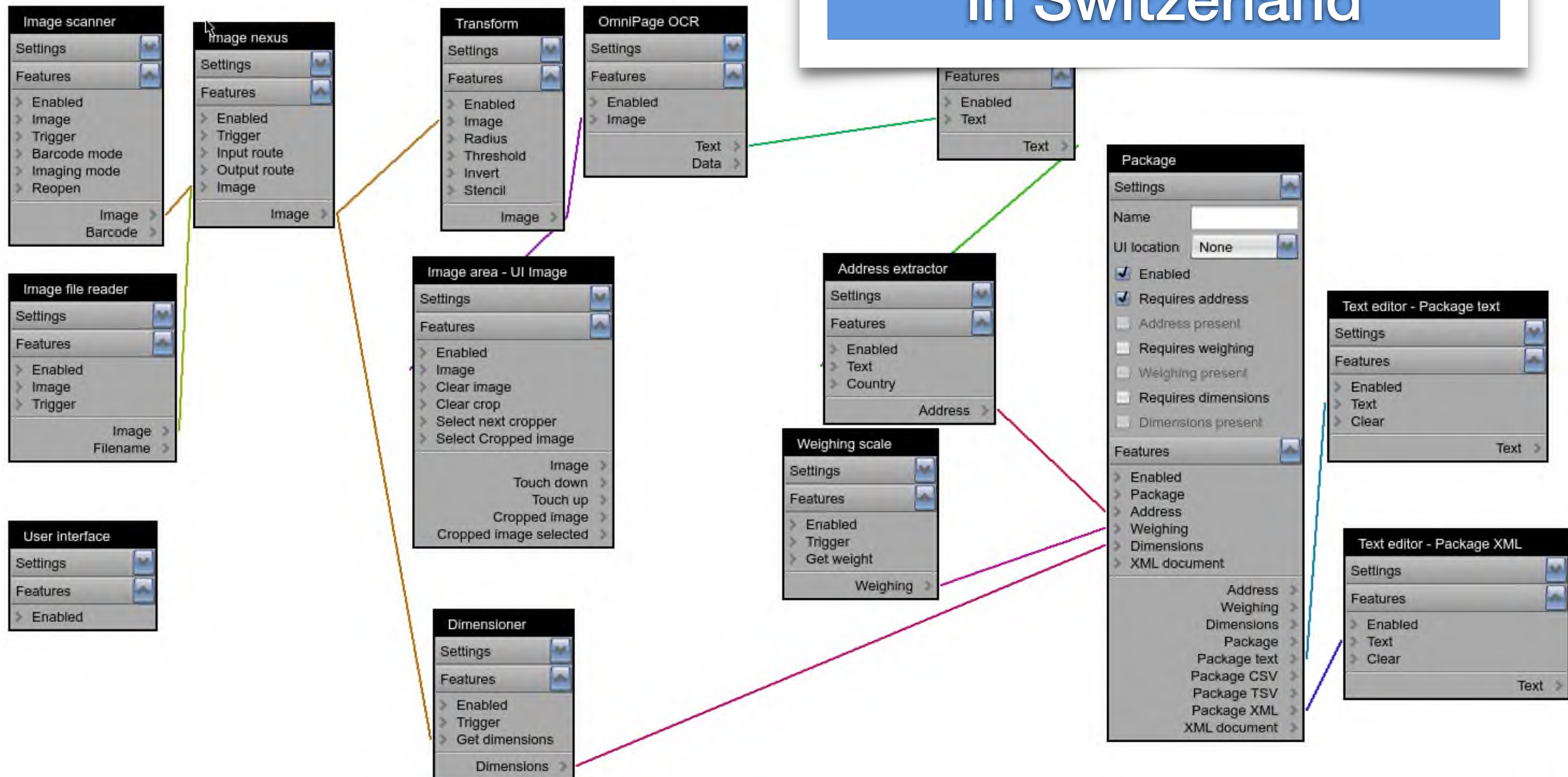
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[Wind industry solutions](#)

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To handle return mails
in Switzerland



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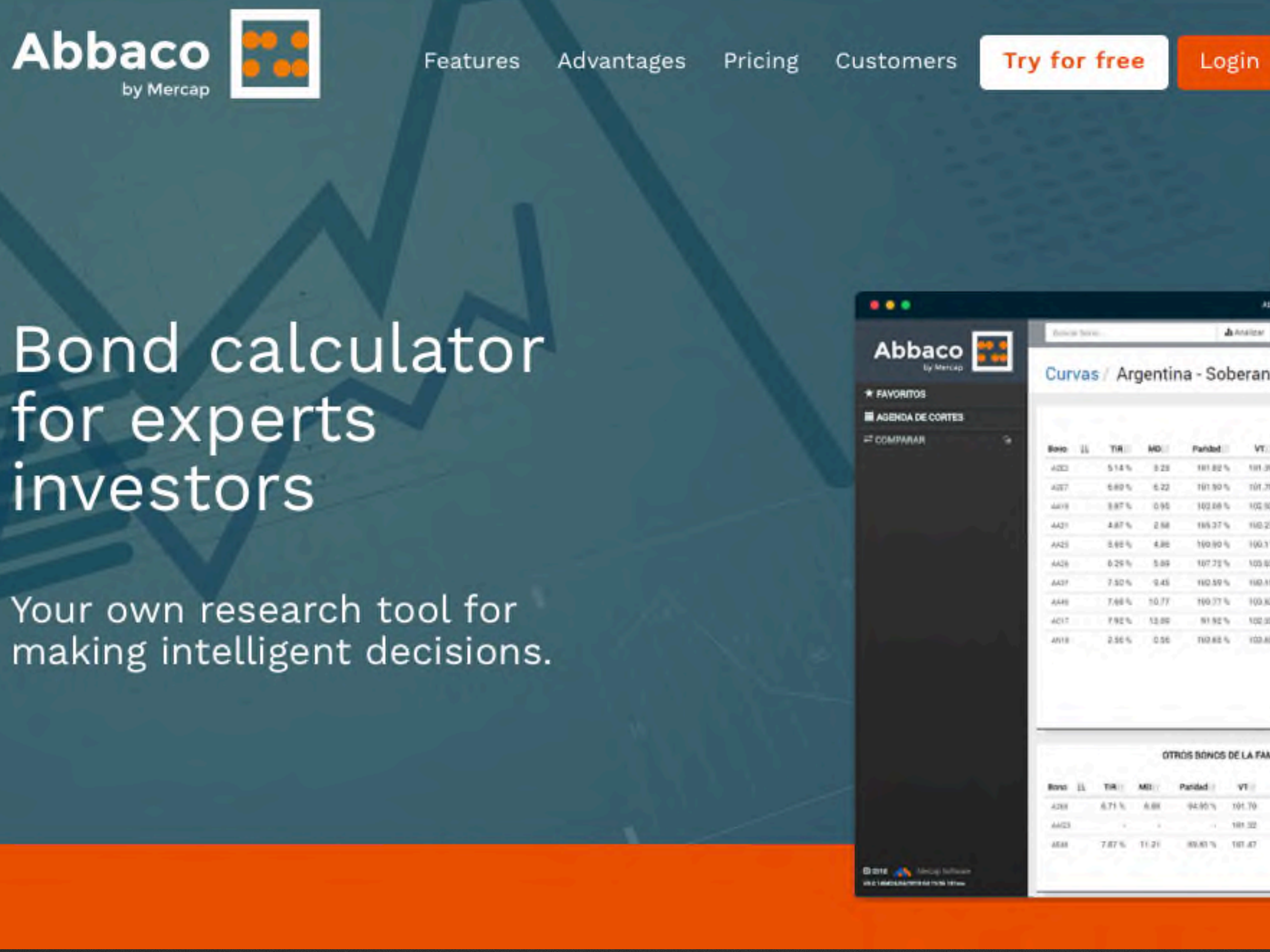
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Bond calculator for experts investors

Your own research tool for
making intelligent decisions.

Abbaco

by Mercap

★ FAVORITOS

📅 AGENDA DE CORTES

🔍 COMPARAR

Buscar Bono...

Analizar

Curvas / Argentina - Soberano

Bono	EL	TIR	MD	Paridad	VT
A202		5.14 %	3.28	101.82 %	101.31
A207		6.80 %	6.22	101.90 %	101.21
A219		9.87 %	0.95	102.88 %	102.30
A231		4.87 %	2.68	105.37 %	105.21
A235		5.65 %	4.86	100.90 %	100.11
A236		6.25 %	5.89	107.75 %	105.81
A237		7.50 %	9.45	100.59 %	100.11
A246		7.68 %	10.77	100.37 %	100.30
A217		7.92 %	13.89	91.92 %	102.30
A218		2.55 %	0.56	102.82 %	102.81

OTROS BONOS DE LA FA...

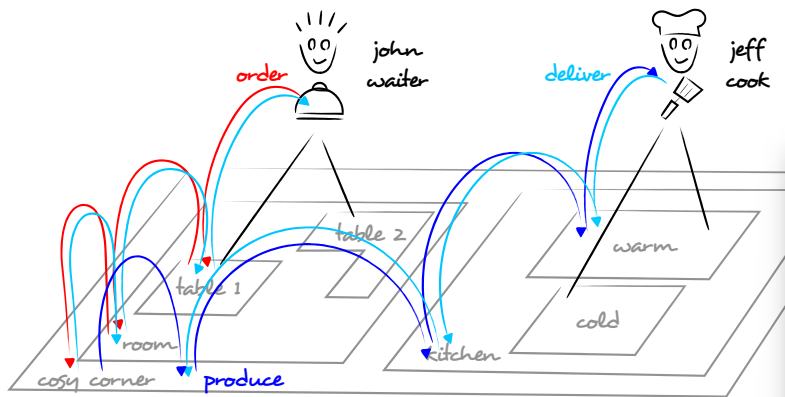
Bono	EL	TIR	MD	Paridad	VT
A208		6.71 %	6.88	94.95 %	101.70
A203		-	-	-	101.32
A248		7.87 %	11.21	89.81 %	101.87

© 2018

Mercap Software

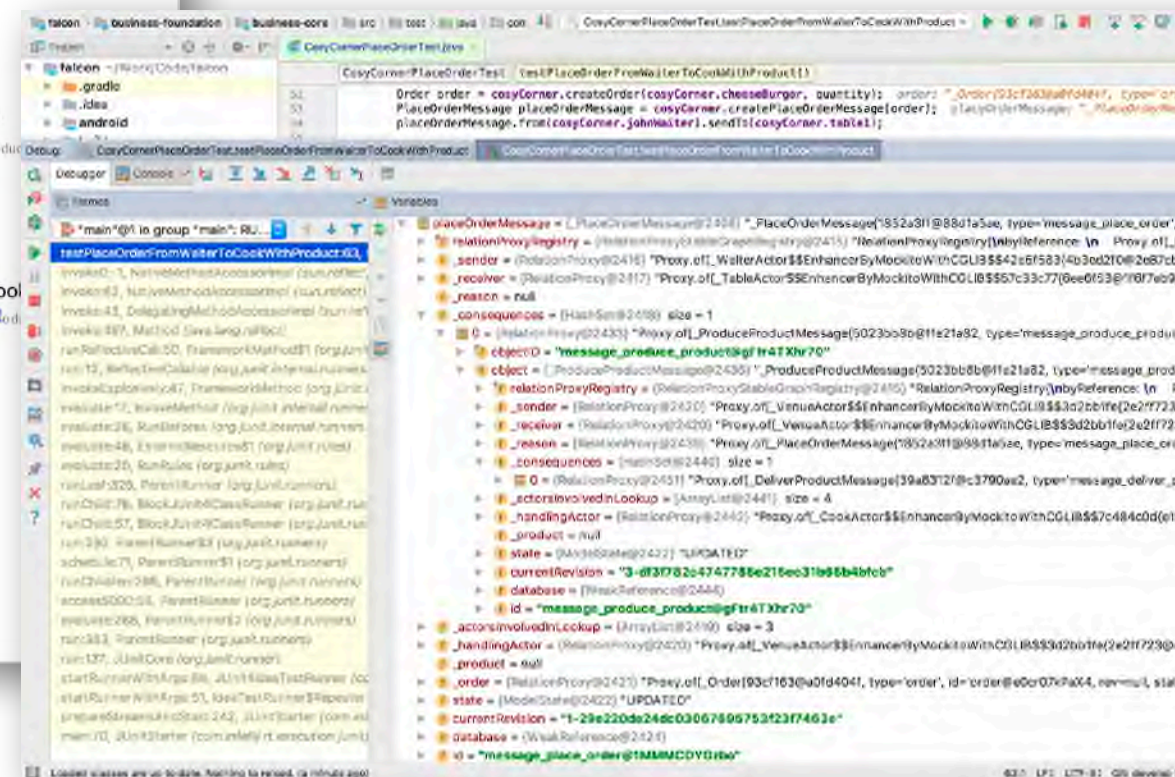
USO Estrictamente Personal

feenk



Help growing startups Get back control on software

```
demo2  
"CONTRIBUTORS"  
jeffCook := OFCookActor new name: 'Jeff Cook'.  
johnWaiter := OFWaiterActor new name: 'John Waiter'.  
"AREAS"  
cosyCorner := OFVenueActor new name: 'Cosy Corner'.  
kitchen := OFRoomActor new name: 'Kitchen'; parentArea: cosyCorner.  
warmStation := OFKitchenActor new name: 'Warm station'; parentArea: kitchen; addContributor:  
jeffCook.  
coldStation := OFKitchenActor new name: 'Cold station'; parentArea: kitchen; addContributor:  
jeffCook.  
room := OFRoomActor new name: 'Room'; parentArea: cosyCorner.  
table1 := OFTableActor new name: 'Table 1'; parentArea: room; addContributor: johnWaiter.  
table2 := OFTableActor new name: 'Table 2'; parentArea: room; addContributor: johnWaiter.  
"PRODUCTS"  
steak := OFProduct new name: 'Steak'; characteristics: {OFWarm}.  
sandwich := OFProduct new name: 'Sandwich'; characteristics: {OFCold}.  
cosyCorner products: { steak . sandwich }.  
"MESSAGE HANDLERS"  
cosyCorner addScriptedMessageHandler  
when: [:message | message isOrderProduct];  
execute: [:message :handler | OFProduceProductMessage new].  
jeffCook addScriptedMessageHandler  
when: [:message | message isProduceProduct];  
execute: [:message :handler |  
handler  
queue: message  
to: [OFDeliverProductMessage new to: handler actor areas anyOne]].  
johnWaiter addScriptedMessageHandler  
when: [:message |  
message isDeliverProduct and: [  
johnWaiter areas includes: message initialReason receiver ]];  
execute: [:message :handler |  
handler  
queue: message  
to: [ self inform: message product gtDisplayString, ' delivered! ] ].  
cosyCorner.  
"ORDERS"  
orderSteak := OFOrderProductMessage new product: steak; sendBy: johnWaiter to: table1.  
orderSandwich := OFOrderProductMessage new product: sandwich; sendBy: johnWaiter to: table1.  
cosyCorner
```



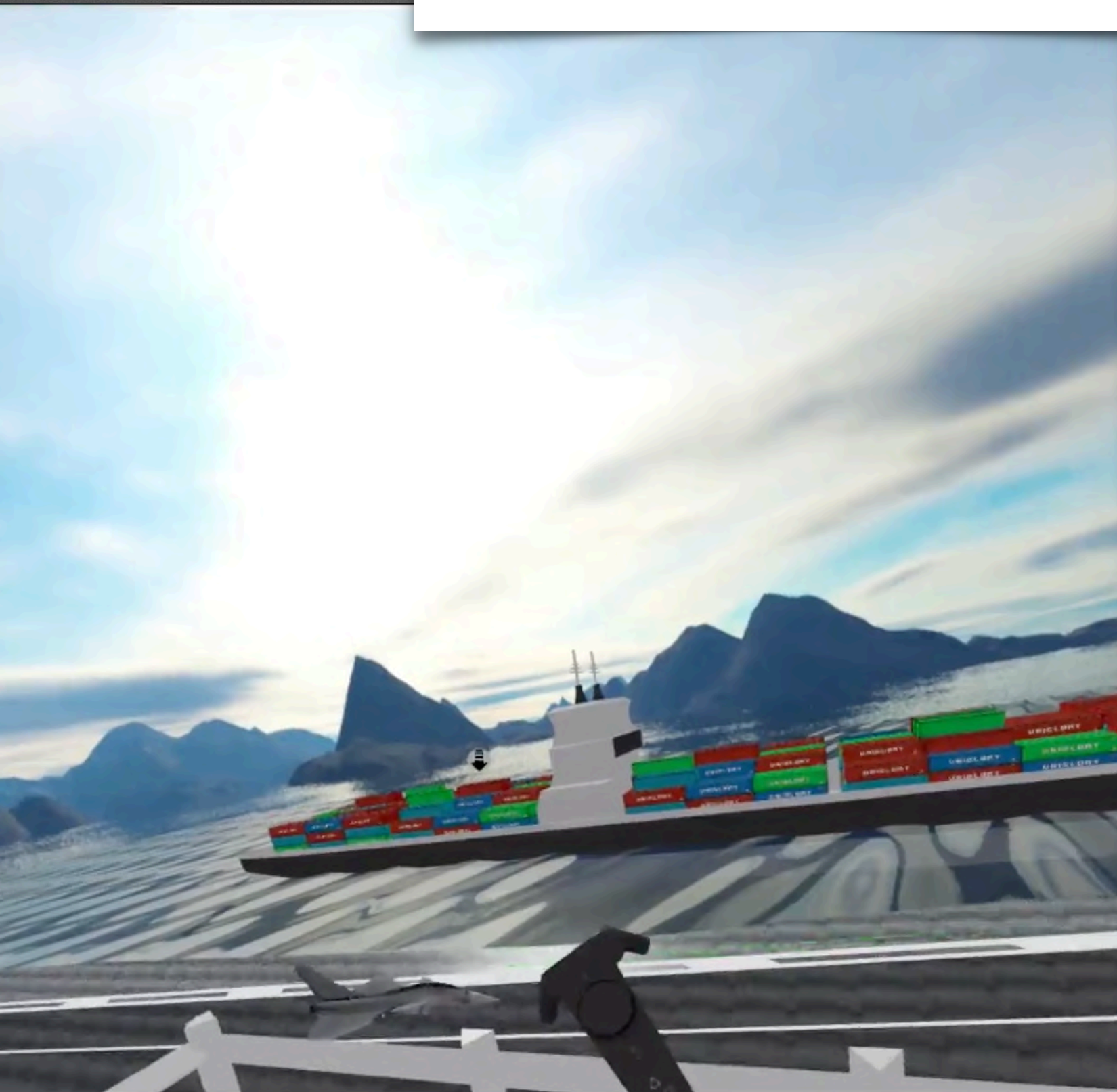
feenk

glamorous**toolkit**

feenk.co
m/gt

Build advanced tools for business experts
and CEO of large companies

Thales prototyping VR



Pharo

Playground

```
tmp := OVRWDemoAircraftCarrier open.  
tmp
```

OVRWDemoAircraftCarrier

Scoped Variables

Type: Pkg1/*Pkg2/Pk

- OpenVR
- OpenVR-Woden
- OpenVR-Woden-Pharo-Help
- Polymorph-Task
- Polymorph-Widg
- PragmaCollector
- ProfStef-Core
- ProfStef-Help
- ProfStef-Tests

ProtoObject

- Object
- WDAApplication
- WDFPSEExample
- OVRWEmptyExample
- OVRWExample
- OVRWDemoAircra
- OVRWDemoPickir
- OVRWExampleCol

Hier. Class Com.

History Navigator

- all --
- event handling
- initialize
- menu
- scene content
- updating
- addAbeilleBourbon
- addBarrel
- addBoxes
- addCargo
- addCharlesDeGaulle
- addHawkeye
- addHelicopter
- addObjectAt:orientation:
- addPlayableAreaToScene
- addRadar

Controls:

- Big front button for teleportation
- Menu button to change the color of the sea

OVRWExample subclass:

```
#OVRWDemoAircraftCarrier  
instanceVariableNames:  
'flyingRafaleNode teleportLocations  
scrollGestureListener menu  
operationQueue waterMaterial  
dynamicsWorld'  
classVariableNames: ''  
package:
```

1/11 [2] -- 1/11 [25] Format as you read W +L 1/3 [1]

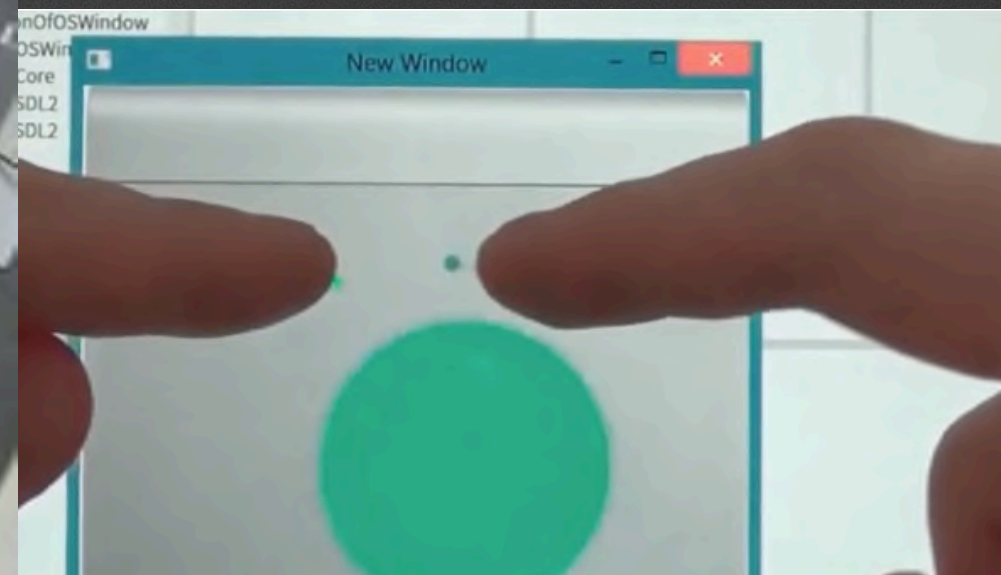
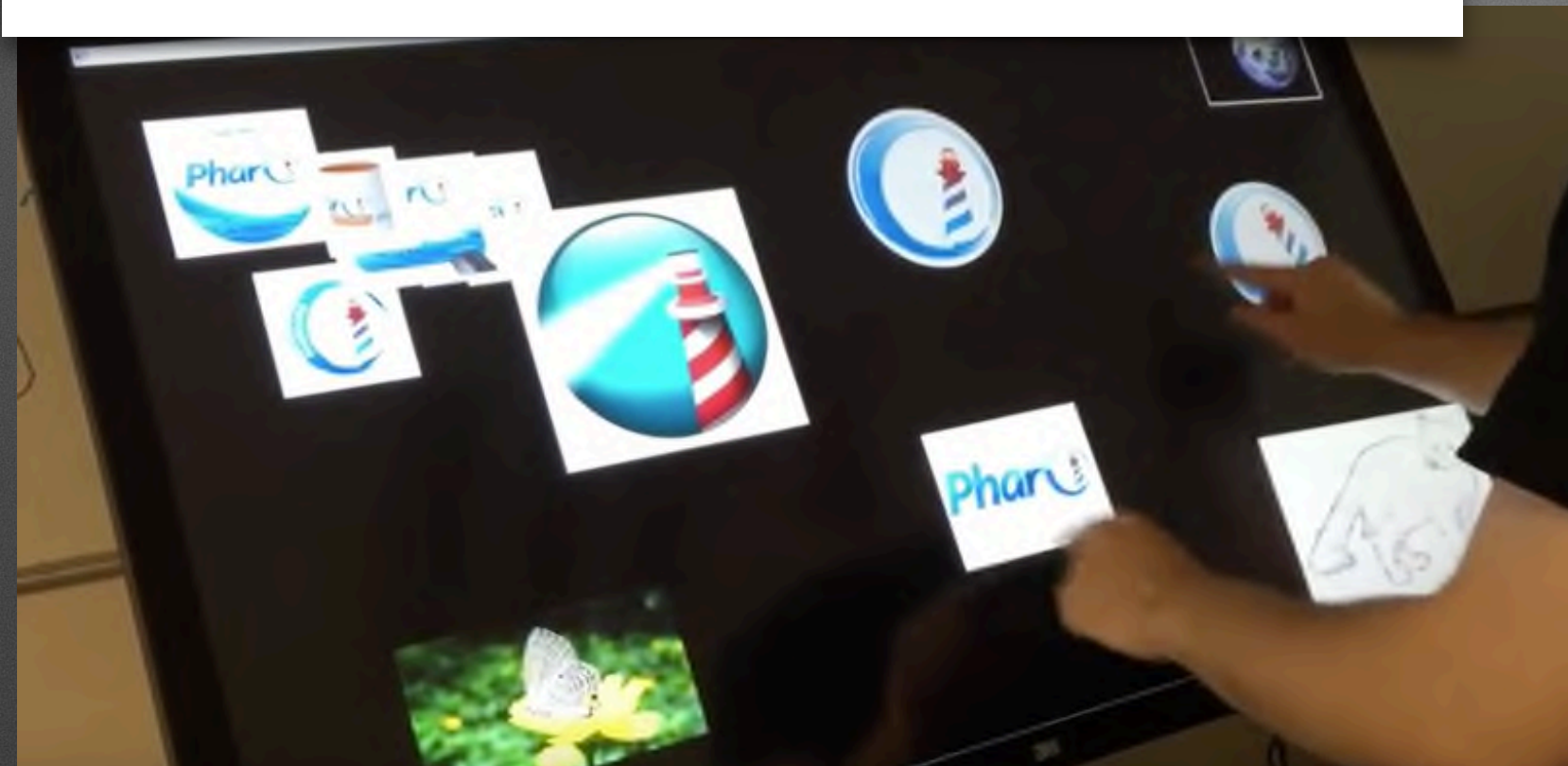
Class not referenced ? X

[dynamicsWorld] Instance variables not read AND written ? X

[dynamicsWorld] Variables not referenced ? X

OVRWDemoAircraftCarrier Playground

Thales prototypes advanced interaction design



Mobility Map: a broker for mobility services

multi-modal routing search

docker running dozens of pharo

The screenshot displays the Mobility Map application interface, which is a multi-modal routing search tool. The interface is divided into several sections:

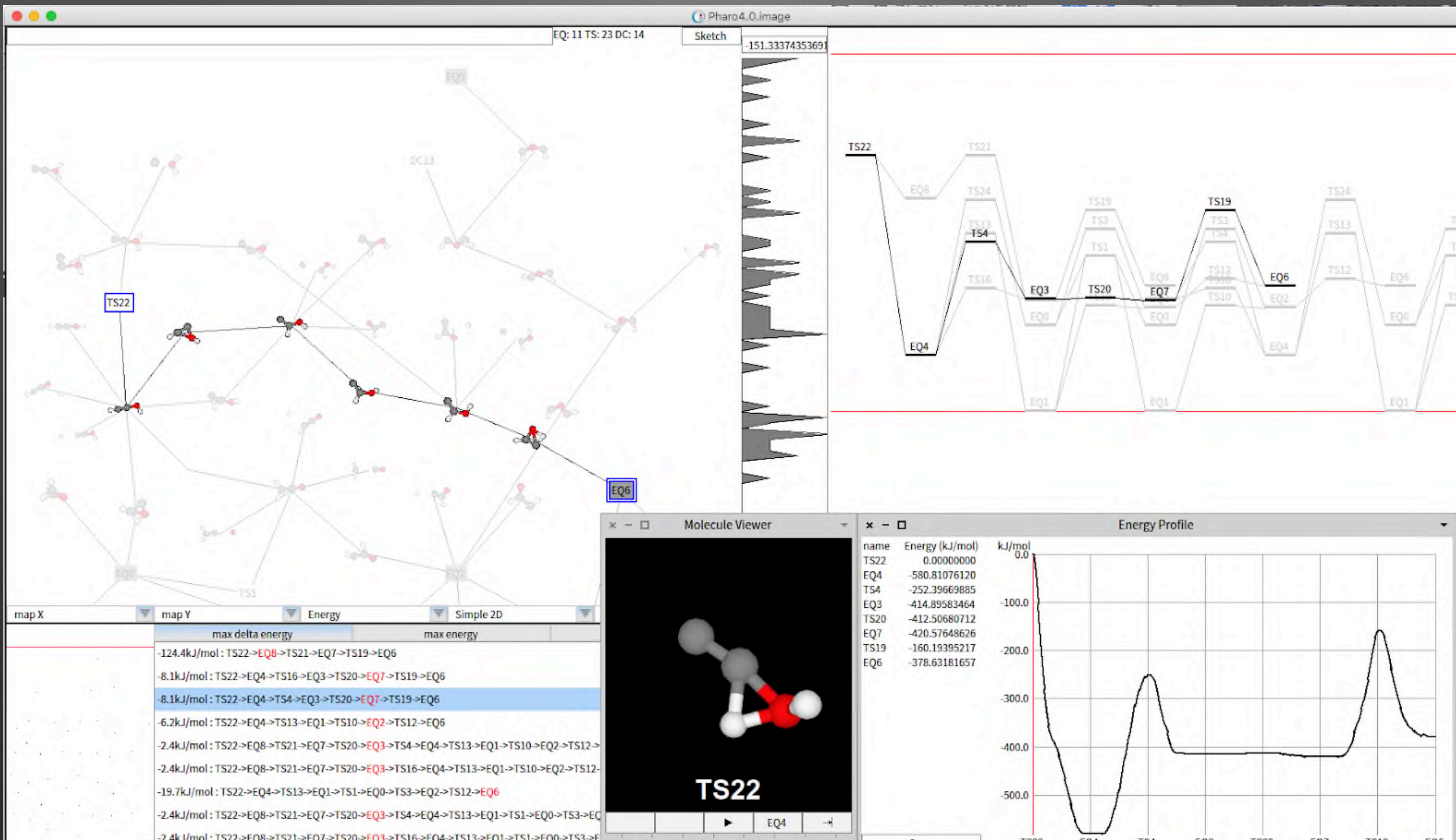
- My Bookings:** A sidebar on the left showing a list of bookings. Each booking includes a car icon, the vehicle type (e.g., "smart forfour", "Opel Astra Kombi"), and the date and time range (e.g., "29. Sep 2018 15:00 until 29. Sep 2...").
- Search Plan Trip:** A section with a home icon and the text "Search Plan Trip".
- My Bookings Add and send tickets:** A section with a car icon and the text "My Bookings Add and send tickets".
- My Account Manage linked accounts:** A section with a person icon and the text "My Account Manage linked accounts".
- Help and Information FAQ, Service and Contact:** A section with an information icon and the text "Help and Information FAQ, Service and Contact".

The main content area shows a map with a route from Hamburg to Bremen. The route is displayed as a series of colored blocks representing different transport modes and their schedules:

- Outbound:** From: Kreetzlag 10 21129 Hamburg To: Bremen. Departure: 29. Sep until 17:10.
- 13:30:** Shuttle bus 1004 Bus Finkenwe...
- 15:10:** Ridesharing H. 9
- 16:28:** Shuttle bus 1006 Bus Finkenwe...
- 16:39:** CarPool A (Kleinwagen) H. 50/51
- 16:34:** CarPool A (Kleinwagen) H. 62
- 16:32:** CarPool A (Kleinwagen) H. 9
- 16:23:** CarPool A (Kleinwagen) H. 14 W [OWN]
- 16:23:** CarPool A (Kleinwagen) H. 214

The interface also includes a language selector (en/de) and an imprint link at the bottom left.

RMap Chemical viewer



LifeWare



800

thousand

policies currently managed by our solution

25

€ billion

assets under management

15

satisfied customers

90

thousand

page per views per day

130

thousand

authorized users

30 Millions lines of code...

Kent Beck is one of the founders

Why Pharo?

(A marketing thought...)



1983



1983

1981



1981



**We like smalltalk but
we love Pharo because
it is more :)**

We should sale Pharo the right way

”I have just completed week seven of the Pharo Mooc I have already learned so much ! I have spent the last 20 years or so in software development and, following this Mooc, I realized I hadn't really grasped the essence of object oriented design” GMJuliet on discord June 2019

We are a cool community



More Pharo's Teachers

• Uni. of Bern • Uni. of Novi Sad • Uni. of Maroua •
Uni. of Brussels • Ecole des Mines de Douai • Uni. de
Savoie • Ivan Franko Nat. Uni. • Czech Technical Uni.
• CULS Prague • Uni. of Buenos Aires • Uni. of
Quilmes • Uni. of La Plata • Northern Michigan Uni. •
Uni. Technologica Nacional (UTN) • Uni. of Santiago •
Uni. Policnica de Catalunya • Uni. de Bretagne
Occidentale • Uni. of Tomsk • Uni. of Fernhagen • IT
University of Copenhagen • Uni. of Yaounde • INFTI •
Uni. of Lyon • Uni. of Cordoba • Uni. of Lille • Uni. of
Monterrey • Enit • Uni. of Yaounde • Vietnam France
University • Uni. of Yamanashi Gakuin

Research Groups

Lafhis (AR)

SCG (CH)

CAR (FR)

RMOD (FR)

Ummisco (IRD)

Reveal (CH)

Lysic (FR)

CEA-List (FR)

Uqbar (AR)

OC (FR)

CCMI-FIT (CZ)

ASERG (BR)

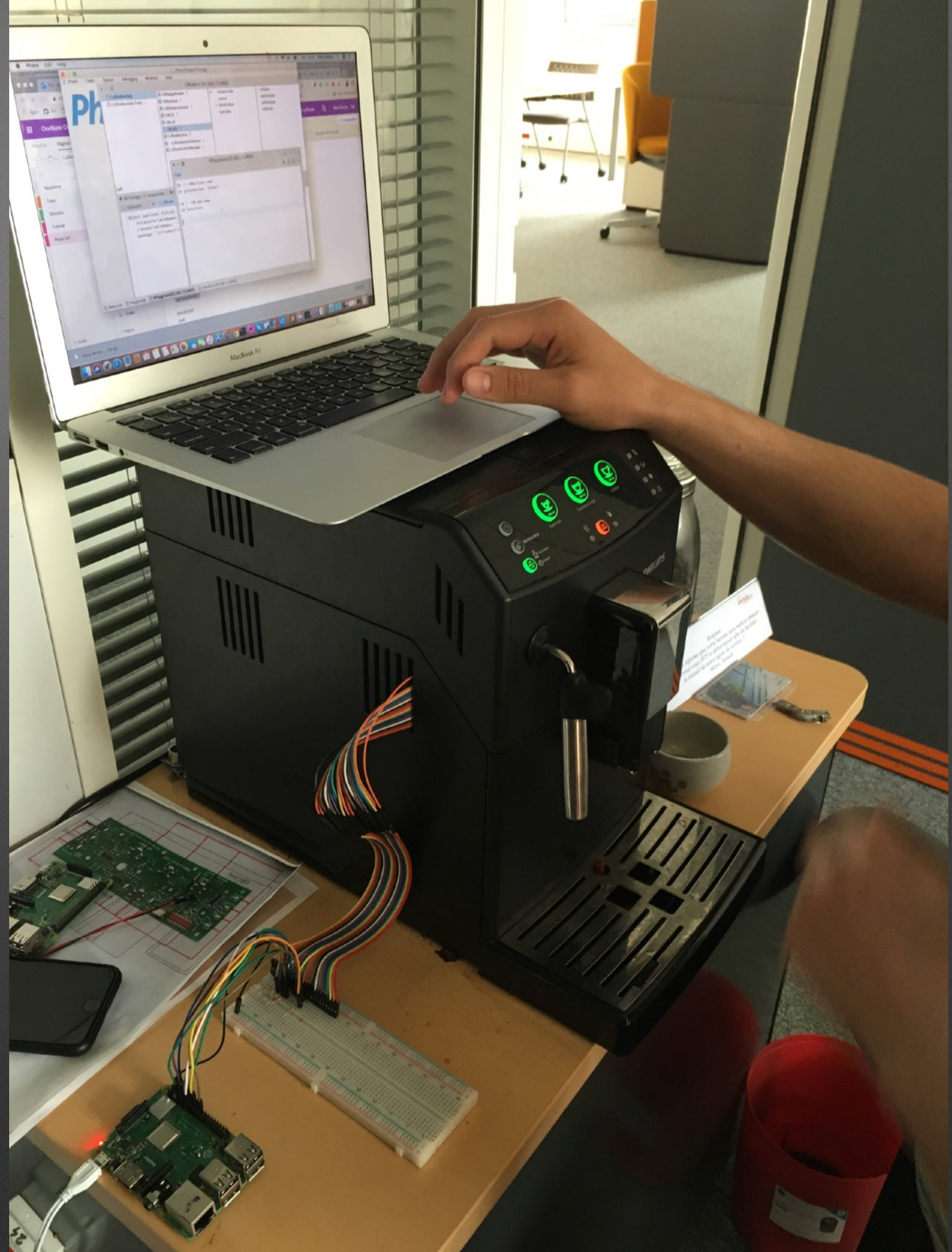
Pleiad (CL)

SoftwareQlab (Sr)

ENIT (FR)

SRA (Jap)

Fun ...



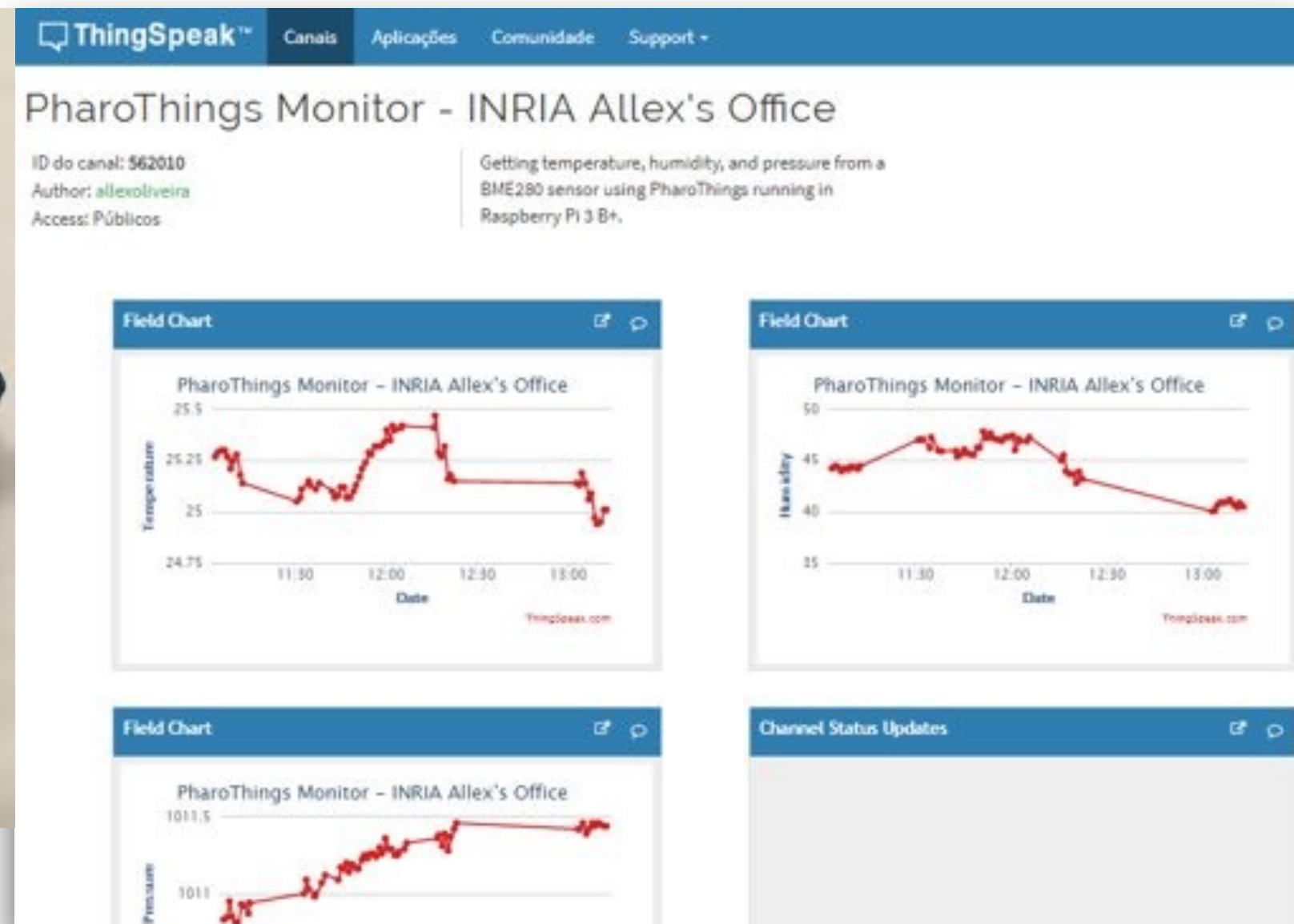
PharoThings

```
lcd := board installDevice: PotLCD1602Device new.  
lcd message: 'Hello everybody!\Pharo is cool!'.  
lcd clear.
```



PharoThings

Taking sensor data with Pharo, showing in LCD display and sending to a remote server



Life board

Board Inspector

- Provides a scheme of pins similar to physical position
- A live tool which represents the current pins state
- Digital pins are shown with green/red icons which represent high/low (1/0) values

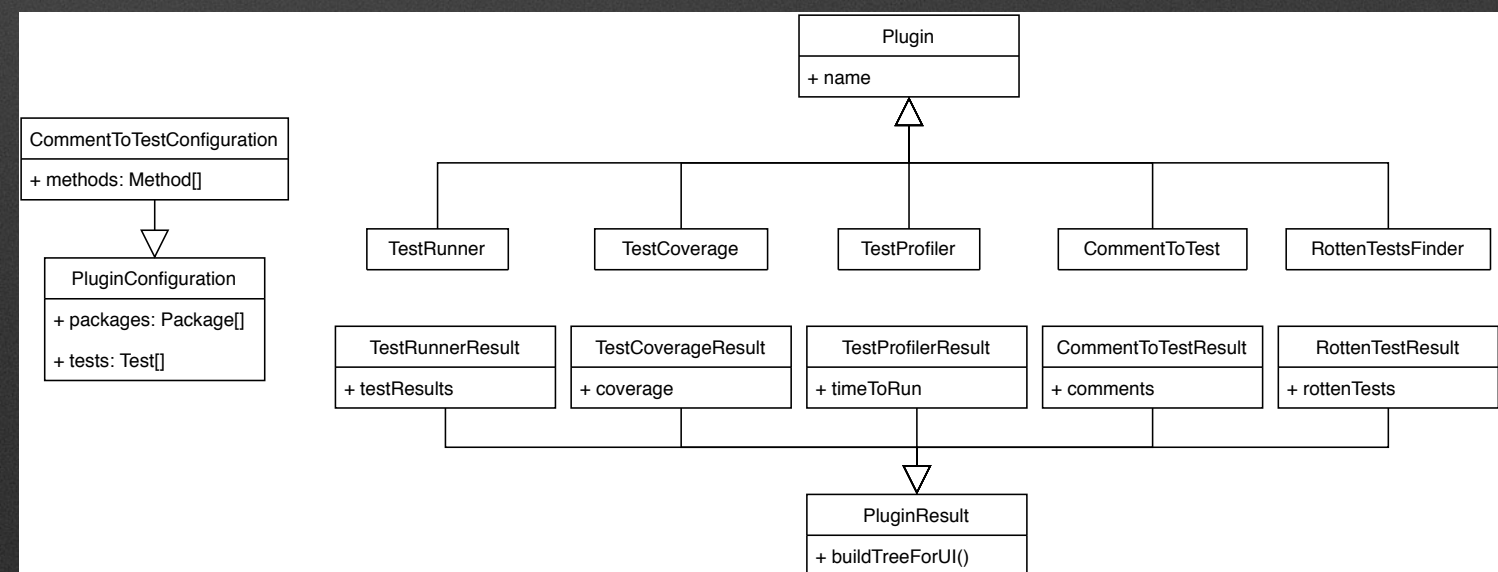
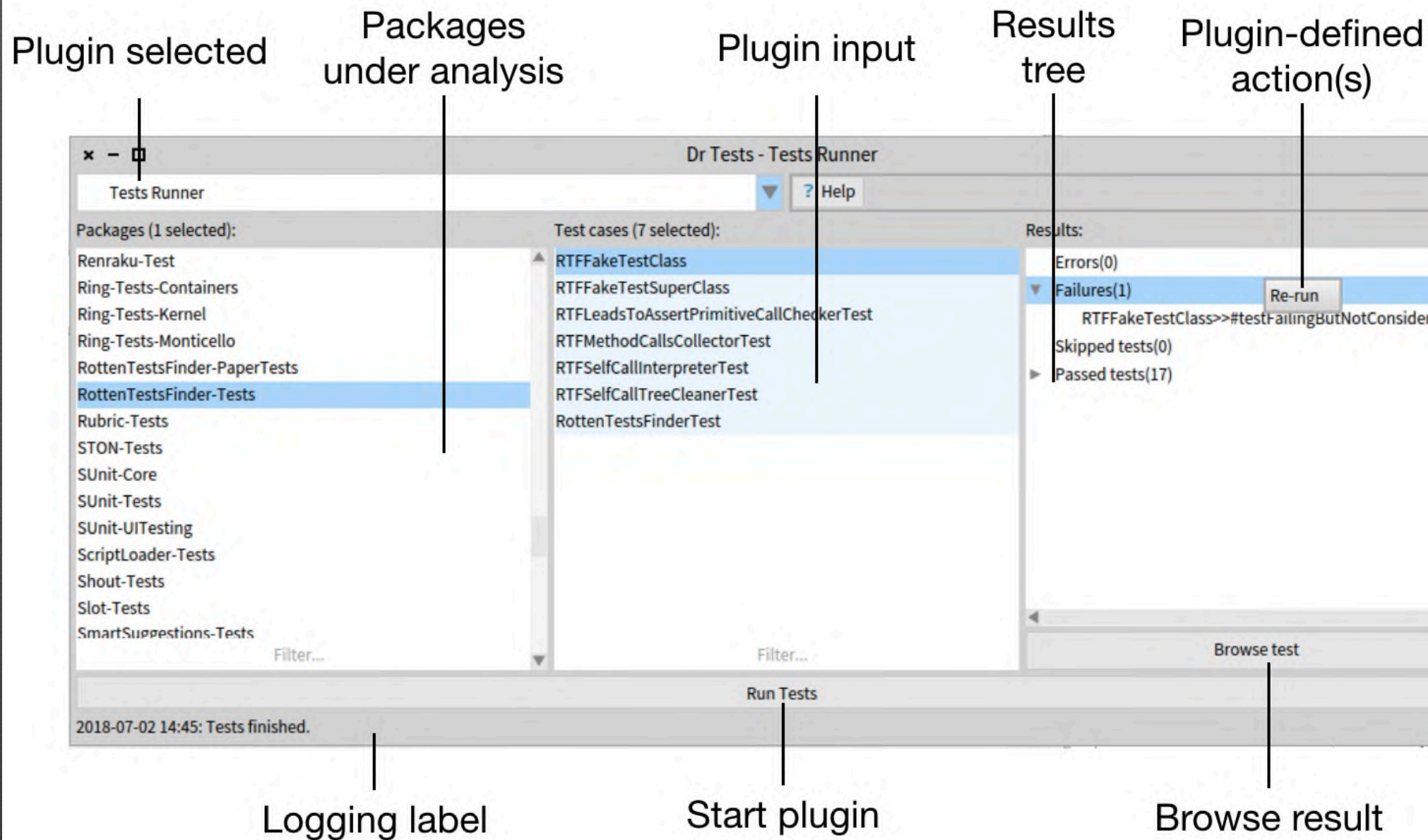
a RpiBoard3B							
P1 Devices Raw Meta							
Id	Value	Name	Pin#	Pin#	Name	Value	Id
		3.3v	1	2	5v		
2		SDA (I2C)	3	4	5v		
3		SCL (I2C)	5	6	Ground (0v)		
4		GPIO7	7	8	SerialPortTXD		14
		Ground (0v)	9	10	SerialPortRXD		15
17		GPIO00	11	12	GPIO1		18
27	out	GPIO2	13	14	Ground (0v)		
22		GPIO3	15	16	GPIO4	out	23
		3.3v	17	18	GPIO5		24
10		MOSI (SPI)	19	20	Ground (0v)		
9		MISO (SPI)	21	22	GPIO6	in	25
11		SCLK (SPI)	23	24	CE (SPI)		8
		Ground (0v)	25	26	CE (SPI)		7
0		SDA (I2C)	27	28	SCL (I2C)		1
5		GPIO21	29	30	Ground (0v)		
6	out	GPIO22	31	32	GPIO26		12
13		GPIO23	33	34	Ground (0v)		
19		MISO (SPI)	35	36	GPIO27	out	16
26	in	GPIO25	37	38	MOSI (SPI)		20
		Ground (0v)	39	40	SCLK (SPI)		21

Pharo 8.0 & 9.0

**If it has no tests....
it does not exist.**

Dr. Tests (1987 - ...)





Spec20

- Large cleanup
- New widgets
- Layouts
- Multiple back ends (Morphic, GTK30)

Browser

▼ Morph

▶ BorderedMorph

HandMorph

▶ AbstractResizerMorph

AnimatedImageMorph

BracketMorph

▶ FTSelectableMorph

FTTableContainerMorph

halo:

copyToPasteBuffer:

savePatchFrom:

balloonHelp:

generateMouseEvent:

obtainHalo:

sendMouseEvent:

eventListeners:

moveToEvent:

obtainHalo: aHalo

"Used for transferring halos between hands"

self halo == aHalo

ifTrue: [^ self].

"Find former owner"

self world hands detect [:hand | hand halo == aHalo] ifFound: [:formerOwner | formerOwner

releaseHalo: aHalo].

self halo: aHalo



Browser

▼ Morph

▶ BorderedMorph

HandMorph

▶ AbstractResizerMorph

AnimatedImageMorph

BracketMorph

▶ FTSelectableMorph

FTTableContainerMorph

▶ FTTableMorph

FullscreenMorph

halo:

copyToPasteBuffer:

savePatchFrom:

balloonHelp:

generateMouseEvent:

obtainHalo:

sendMouseEvent:

eventListeners:

moveToEvent:

mouseFocus

sendEvent:focus:

obtainHalo: aHalo

"Used for transferring halos between hands"

self halo == aHalo

ifTrue: [^ self].

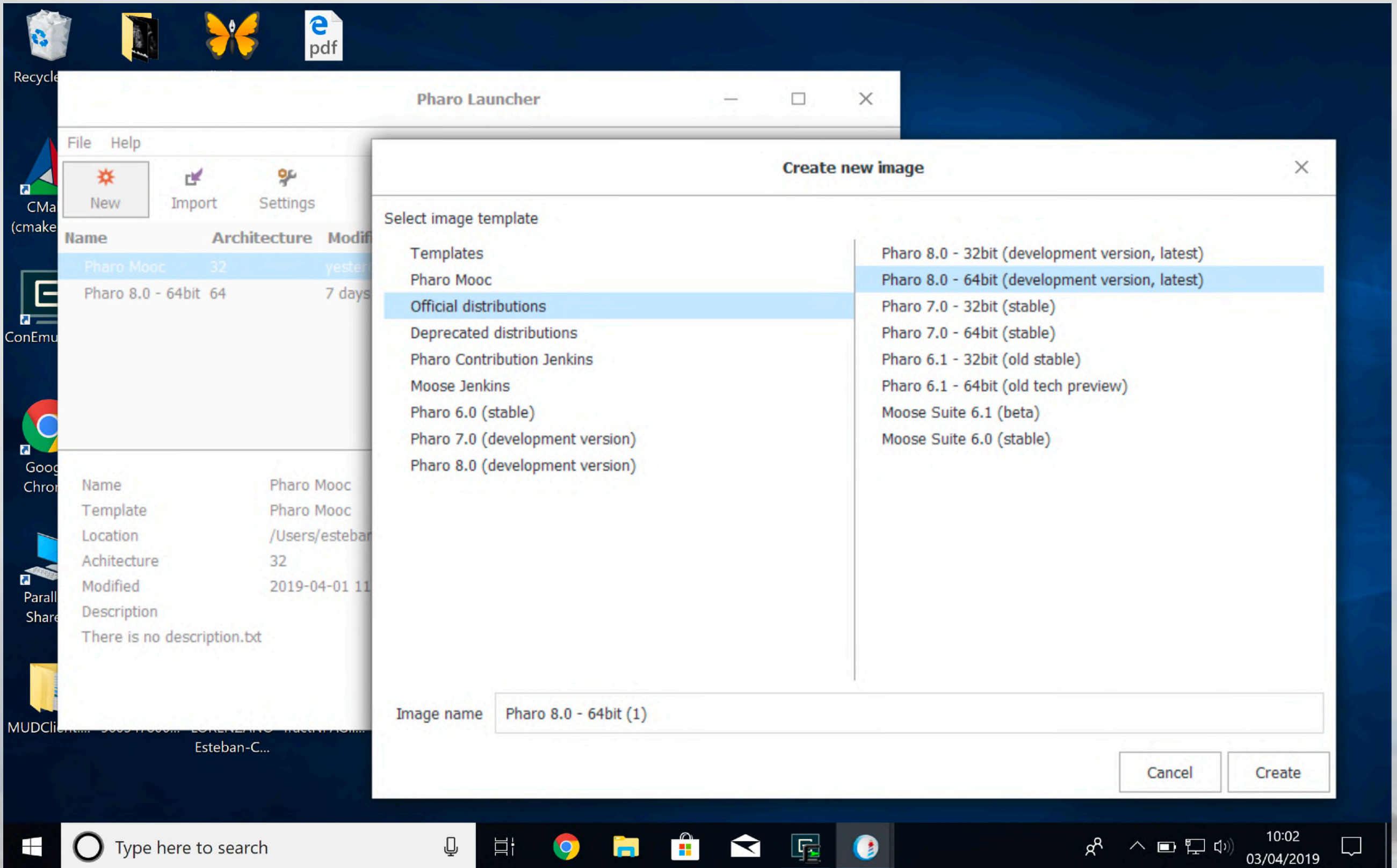
"Find former owner"

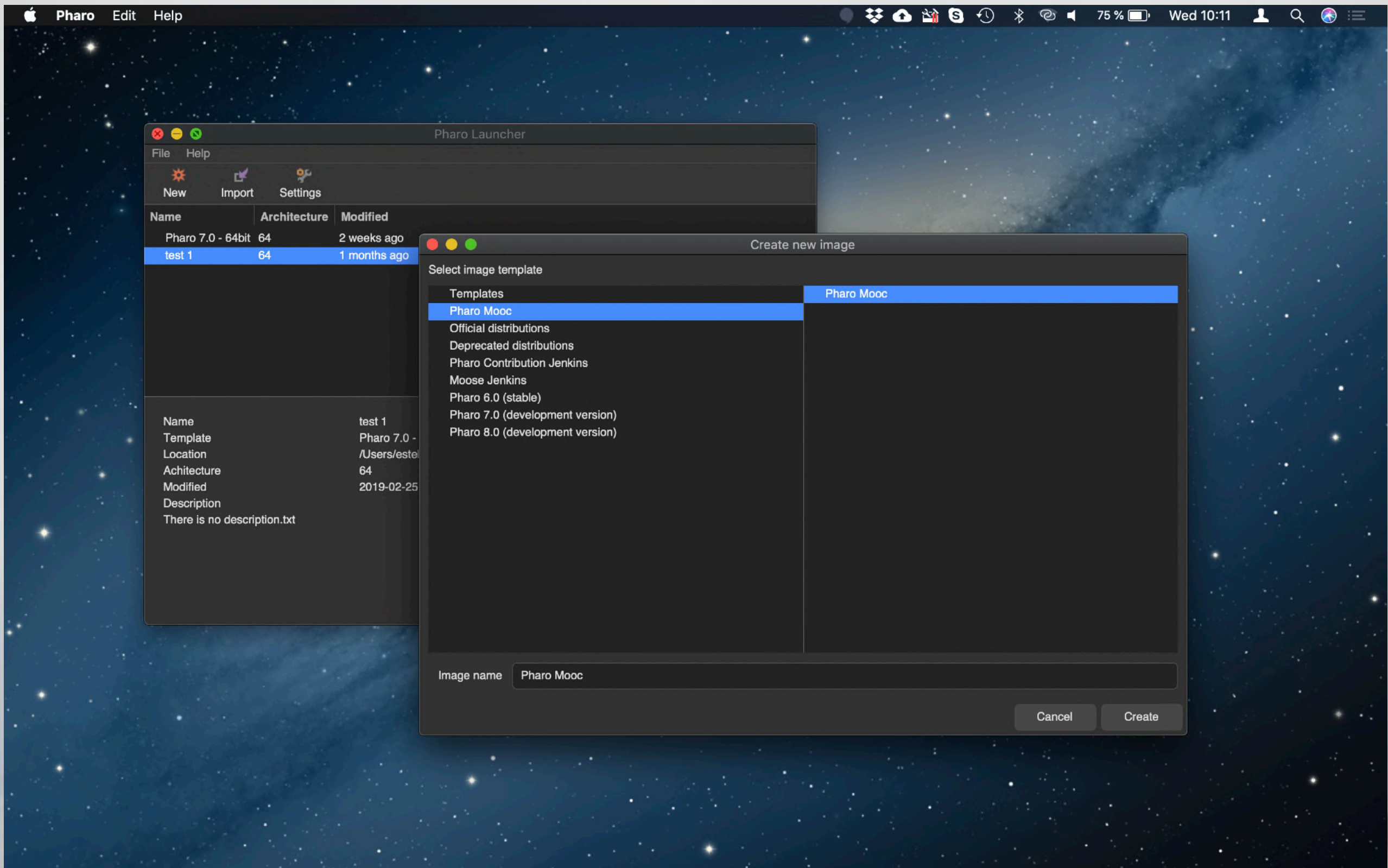
self world hands detect: [:hand | hand halo == aHalo] ifFound:

[:formerOwner | formerOwner releaseHalo: aHalo].

self halo: aHalo







WILLIS

```
(E)nter your name: laar
(P)assword: Redondos42
```



來 1
了 1
么 1
說 1
那 1
這 1
好 1
星 1
要 1
然 1
十 1
家 1
下 1
到 1
人 1
一 1
可 1
地 1

時

time season
seasonal
hour
era age period
opportunity
current contemporary
when time ;白銀 可以 指 銀 貴金屬 用作 貨幣 可 稱為 白銀 ;w:Standard Chinese w:Traditional Chinese ;白銀 可以 occasionally

It sounds like 時,實,戲,拓,鏘,薛,花,增,壯,拓,題,遞

們 1
不 1

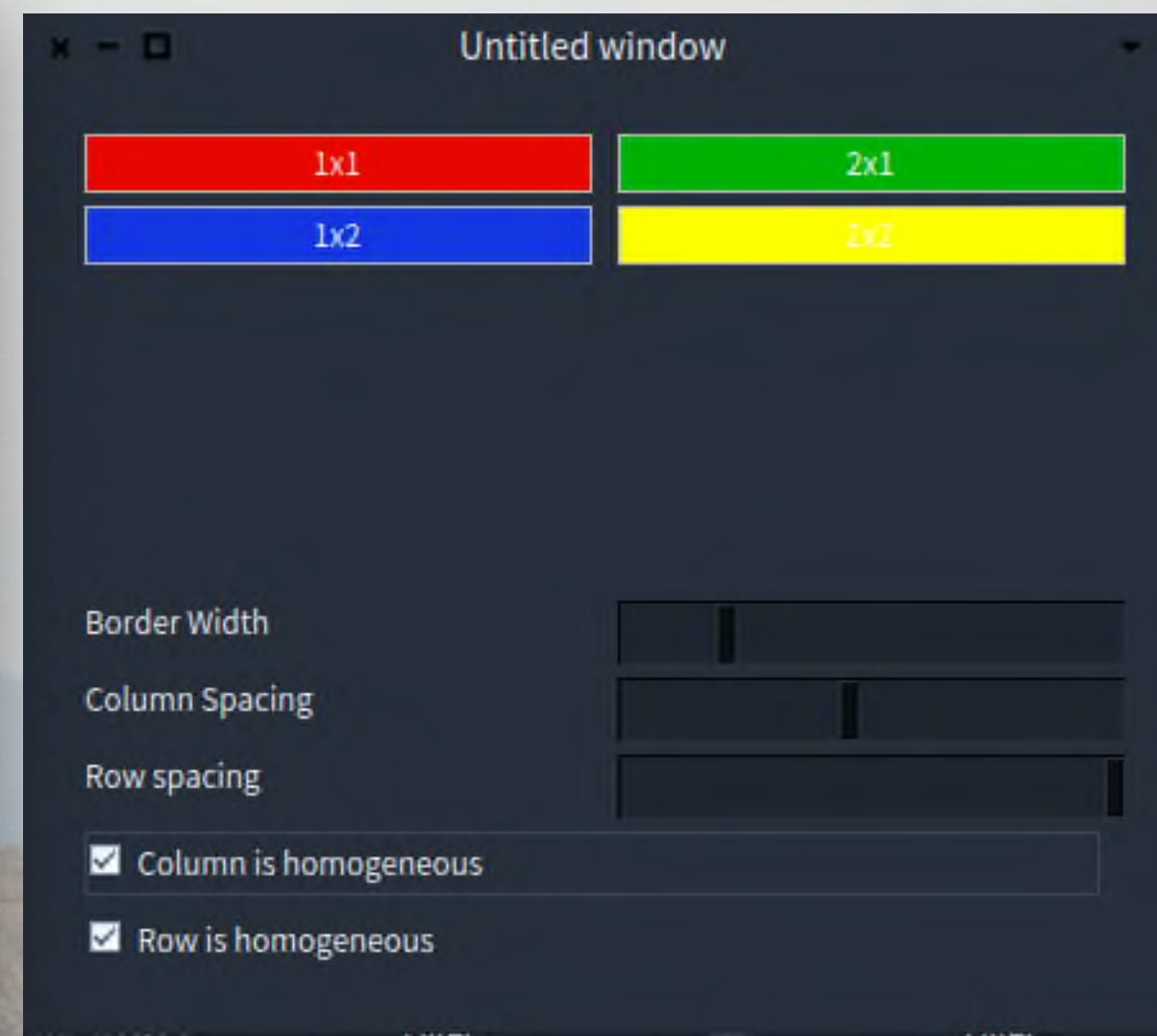
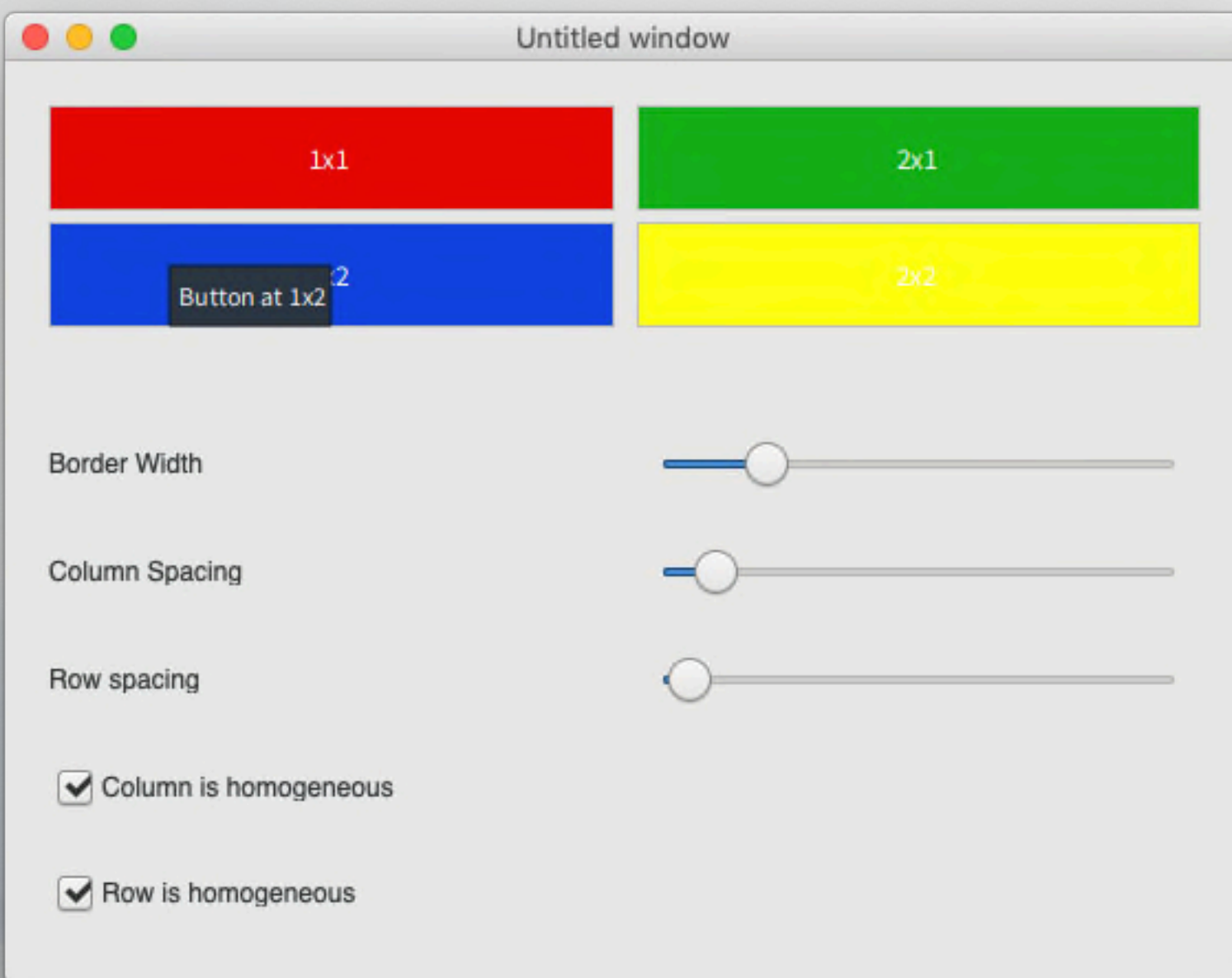
Accept

Hint

Give up

Inspect





Testing Spec

- Many tests
- Parameterized (same for Morphic and GTK30)



Presenters

Layouts

Widgets

Adapters

Headless: true server side

- For real, no UI when no need it
- SDL back-end
- Embeddable

Consortium agenda

 Spec v2.0  8

 Better FFI Infrastructure  8


 Better windows
integration  8

 Basic encryption  8



 Zip  8



Consortium agenda



 File primitives performance on Windows  8

 cmd+dot not working in all cases  9

 Parallel processing (not just parallel testing, which can be resolved at image side)

 Memory management and general command line usability/ documentation  8

 GC stops 2-3min for fullGC (in large images)  9

 Parallel testing  9

 Refactorings  8

 Degradation in performance  8

 Latency (on spotter and completion), remarkable in large images.  8

 Quality rules on big classes/ images  8

 Headless Multiple windows  8

New debugger (Preview)

- Object-centric
- Replay subexpr
- Sindarin: Scriptable DIY
- Chest (to store your little objects)

mod

Debugging Department

Great debugging sorcerers. Beware.

We solve all problems.

Bugs. Hard bugs. Impossible bugs. Absence of bugs. Return of the loved one(s). Metro strikes. Bad TV shows. PhD fundings. World peace. Javascript. Tax dodging. Reptilians.

NOTE

THE DOOR IS OFTEN CLOSED BECAUSE OF THE PHARO ARGENTINIAN BAROQUE LYRIC ORCHESTRA IN THE OFFICE ON THE LEFT. UNLESS MENTIONED OTHERWISE ON THE DOOR, FEEL FREE TO ENTER THE MAGICAL WORLD OF DEBUGGING. PAY BEFORE RESULTS. NO REFUNDS. NO JAVA. NOW YOU CAN STOP READING AND GET BACK TO WORK.

Object-centric debugging

- Debugging operations at the level of objects
 - Only target objects are affected
- Examples:
 - A breakpoint active for one object only
 - A method available for one object only

Object-centric breakpoints

Break when a message is received

- `haltOnCall` => on every method call
- `haltOnCall: #selector` => for given selector only
- `haltOnNextCall` => on next method call
- `haltOnceOnCall: #selector` => only once for given selector
- `haltOnCallWhen: condition` => if condition is met

Object-centric breakpoints

Break on state access

- `haltOnWriteTo: #instVarName =>` when `instVarName` is written
- `haltOnRead: #instVarName =>` when `instVarName` is read
- `haltOnWrite =>` when any instance variable is written
- `haltOnRead =>` when any instance variable is read

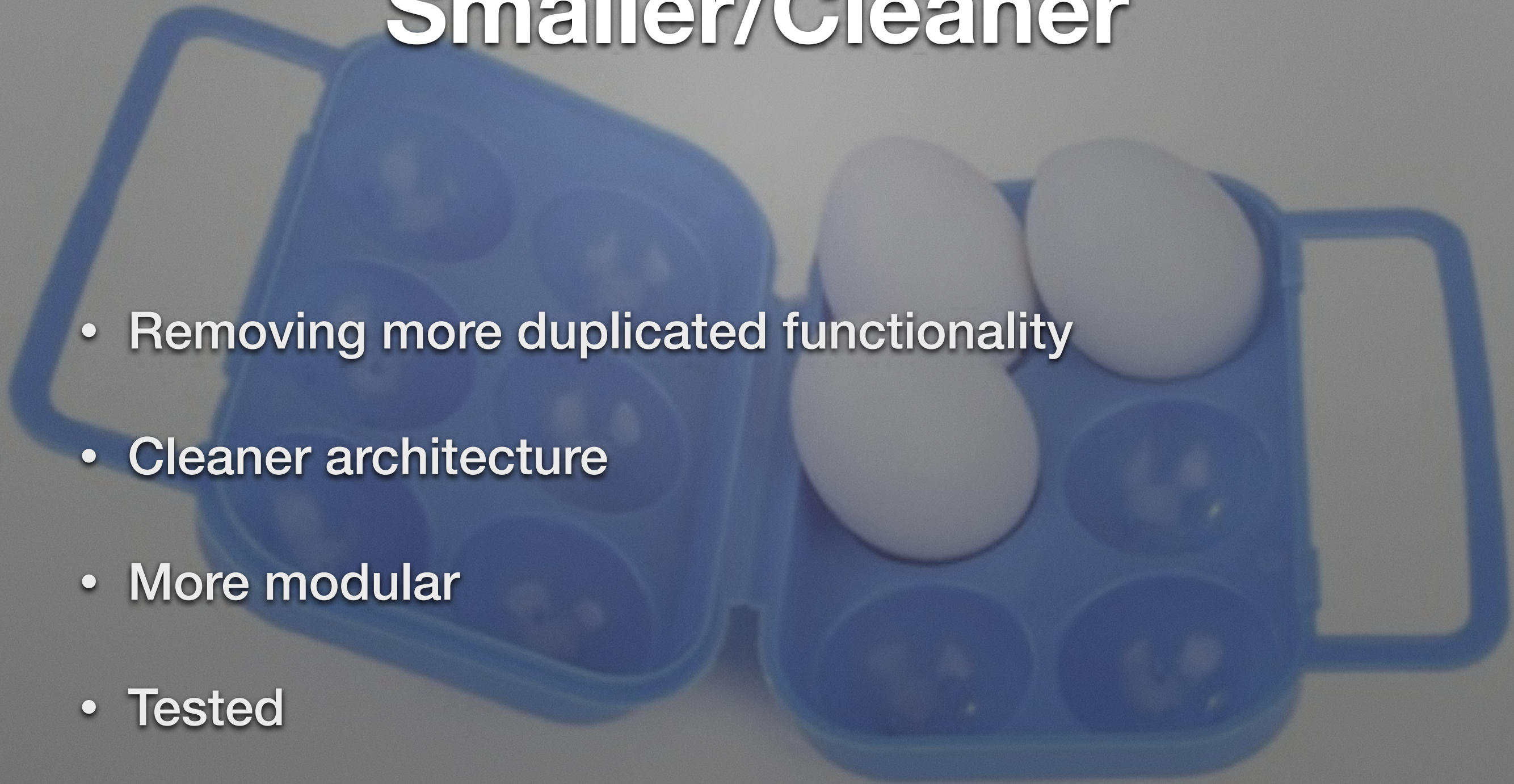
Who's working on it?

- AST interpreter - Carolina Hernandez Phillips
- Reverse-execution - Vincent Aranega, Steven Costiou
- Object-centric debugger - Steven Costiou
- Scriptable debugger - Thomas Dupriez

Vision for Pharo

Smaller/Cleaner

- Removing more duplicated functionality
- Cleaner architecture
- More modular
- Tested



Better tools

- Next generation debuggers
- Customisable

VM

- More tests / better build system
- Learning VM project
- Threaded FFI for real
- P10: getting rid of the polling event loop

New Graphics for real

- Bloc as a new bottom layer
- New widget sets

Since may 2008

Pharo 7.0 - Feb 2019 - 75 committers (2142 closed)

Pharo 6.0 - Jan 2018 - 70 committers (1400 issues closed)

Pharo 5.0 - Apr 2016 100 committers (1600 issues closed)

Pharo 4.0 - Apr 2015 70 committers (1271 issues closed...)

Pharo 3.0 - Apr 2013 (2364 issues closed)

Pharo 2.0 - Apr 2013 (1727 issues closed)

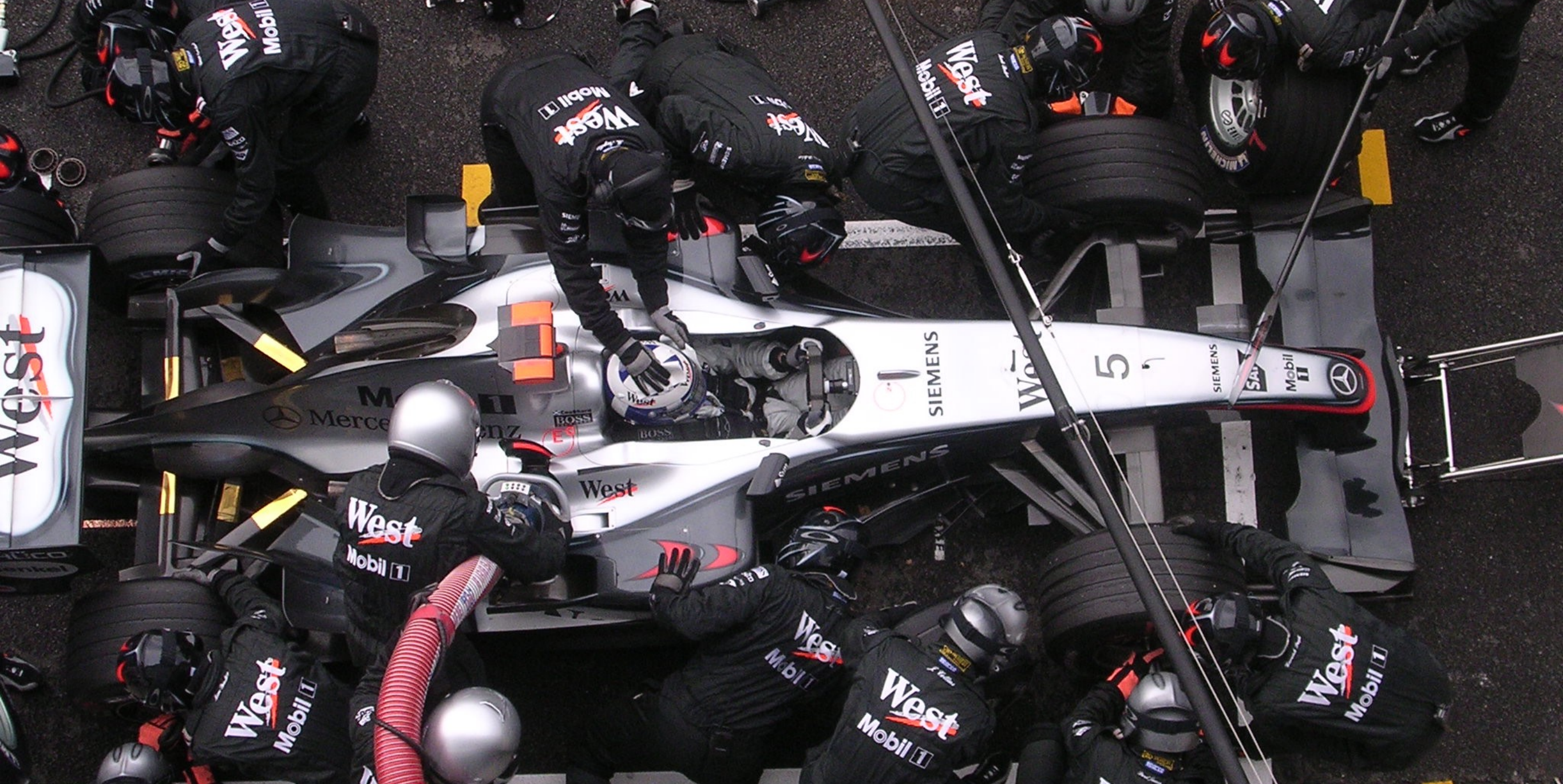
Pharo 1.4 - Apr 2012 (860 updates)

Pharo 1.3 (700 updates)

Pharo 1.2 - mar 2011 (500 updates)

Pharo 1.1 - jul 2010 (410 updates)





Pharo is our vehicle
We improve it everyday

There are plenty of place for
improvements

Pharo

is yours



Yes

is yours

**You can get an impact
Pharo is not a closed box**

A low-angle shot of many hands reaching up towards a clear blue sky, symbolizing unity and contribution. The hands are of various skin tones and are positioned in a circular pattern, with fingers spread, reaching towards the center. The background is a solid, clear blue sky. The text "I want to thank all the contributors" is overlaid in the center in a white, sans-serif font.

I want to thank all
the contributors

A scenic view of a white lighthouse with a black top, situated on a rocky cliff covered in green vegetation. The lighthouse is positioned on the left side of the frame, overlooking a vast, blue ocean. The sky is a clear, pale blue. In the distance, a small boat is visible on the water. The overall atmosphere is serene and coastal.

Fun, simple
Pure & elegant
Productive
Empowering
Addictive
Full access

http://discord.gg/Sj2rhxn

The screenshot shows a Discord server named 'Pharo'. The left sidebar contains a list of channels: 'FOR NEW USERS' (with a sub-channel 'learning-help'), 'mooc' (selected), 'PHARO' (with sub-channels 'general', 'development', 'offtopic', 'iceberg', 'bootstrap'), and 'LIBRARIES' (with sub-channels 'databases', 'polymath', 'roassal', 'roassal-scriptoftheday', 'seaside', 'moose', 'bloc', 'ai', and 'ai-scriptoftheday'). The main chat area displays a message history for the '#mooc' channel, showing a conversation between users akgrant0710, Peter Uhnak, and Marek Erben. The right sidebar shows a list of online users, including Esteban Lorenzano, Juraj Kubelka, kilon, Alexandre Bergel, Clement Bera, PhilBack, Stepharo, Torsten Bergmann, Tudor Girba, Yuriy Tymchuk, and others. The bottom of the interface shows the user 'Stephano' and a message input field.

Pharo

#mooc

23 new messages since 9:59 AM on November 23, 2017

MARK AS READ

akgrant0710 Last Saturday at 11:21 AM
dict includesKey: 'a key'
Take a look through the testing protocol of Dictionary (and superclasses)

Peter Uhnak Last Saturday at 11:26 AM
@Marek Erben especially at::ifPresent:, at::ifAbsentPut: & co.

Marek Erben Last Saturday at 1:14 PM
Yeah, thank you @Peter Uhnak
One more question - is there some simple way to remove one occurrence of item in Bag collection?

Peter Uhnak Last Saturday at 1:34 PM
remove: should do it

Marek Erben Last Saturday at 1:35 PM
But it removes all the occurrences of item, doesn't it?

Yani Last Saturday at 2:20 PM
as in script of the day >url>

Peter Uhnak Last Saturday at 2:36 PM
@Marek Erben did you try? 😊
trying is for free 😊 (edited)

ADMIN—3

Esteban Lorenzano

Juraj Kubelka

kilon
Playing Elite: Dangerous

CHANNEL-ADMIN—7

Alexandre Bergel

Clement Bera

PhilBack

Stephano

Torsten Bergmann ...

Tudor Girba

Yuriy Tymchuk

ONLINE—42

akgrant0710

AlejandroInfante

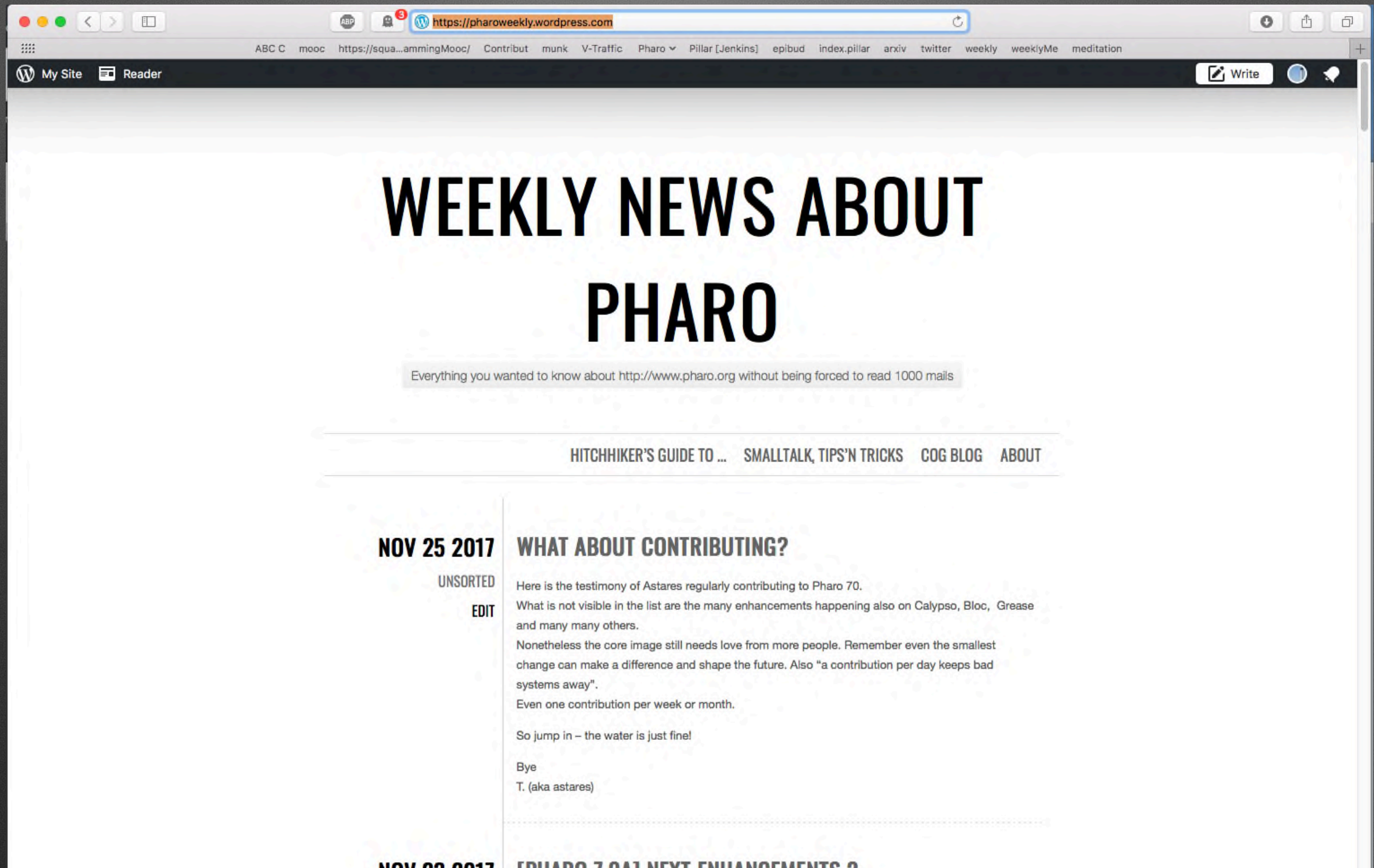
awarenhem

Benoit Verhaeghe

Stephano

Message #mooc

https:// pharowebly.wordpress.com





Join Us!

Creating good energy, software quality,
learning and having fun

<http://pharo-project.org>