

Pharo for Scientists

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

<http://www.pharo.org>



JPMORGAN
CHASE & Co.



feenk



projector
software

inspired!



Sensus
Systems that make sense



ZWEIDENKER

THALES



BetaNine
software engineering



SORABITO



knowroaming
TA MÈRE SCRL
BADASS MOBILE DEVELOPMENT



Pharo?



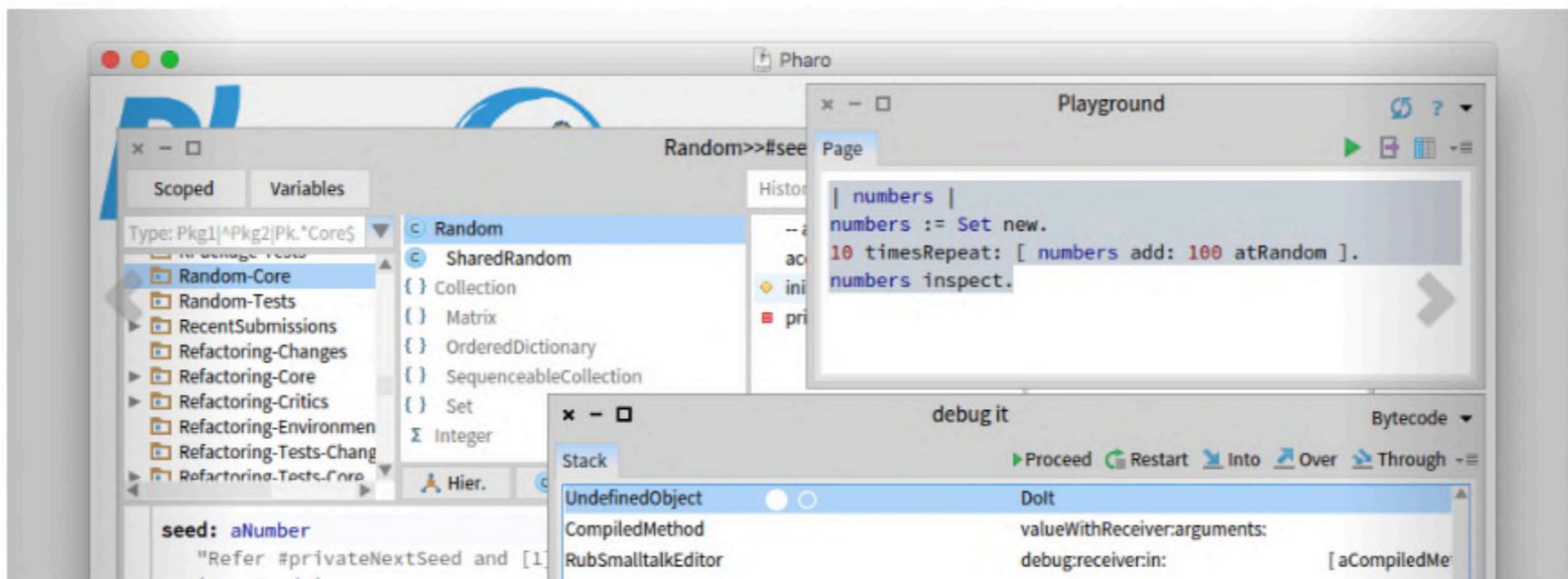
Pharo!

- System: Pure object language + full IDE
- Powerful, elegant and fun to program
- Great community / industrial consortium
- Living system under your fingers
- Works on Mac OSX, Linux, iOS, *Android*, Windows, Pi - 100% MIT



The immersive programming experience

Pharo is a pure object-oriented programming language *and* a powerful environment, focused on simplicity and immediate feedback (think IDE and OS rolled into one).



[Discover](#)

Learn more about Pharo's key [features](#) and elegant design.

[Download](#)

Download latest version (8.0)!

Read more about [here](#)

[Learn](#)

Access the Pharo Mooc!
3000 people registered and follow the Pharo Mooc. You can find it [here](#).

Watch the [teaser](#)!

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Pharo 90
~740 packages
- 9 000 classes
- 120 000 methods

250 forks sur Github
up to 100 contributors
30 regulars
- 8 sub projets
- graphics
- vcs
- tools

Consortium
~ 28 companies
~ 25 academic

Elegant!

- Full syntax on a postcard
- Simple and powerful objet model



The diagram illustrates the Pharo syntax with various annotations:

- method name:** exampleWithNumber: x
- parameter:** x
- pragma:** <syntaxOn: #postcard>
- comment:** "A ""complete"" Pharo syntax"
- local variable:** y
- boolean literals:** true & false not & (nil isNil)
- binary message:** ifFalse: [self perform: #add: with: x].
- unary message:** y := thisContext stack size + super size.
- nil literal:** byteArray := #[2 2r100 8r20 16rFF].
- block:** { -42 . #(\$a #a #'I''m' 'a' 1.0 1.23e2 3.14s2 1) }
- assignment:** y := thisContext stack size + super size.
- keyword message:** byteArray
- pseudo variables:** byteArray
- instance variable:** byteArray
- integer literals:** byteArray
- array generated at runtime:** byteArray
- literal array:** byteArray
- byte array:** byteArray
- local block variable:** do: [:each]
- symbols:** each
- character:** each
- block parameter:** each
- string:** 'I''m'
- float:** 1.0
- floating point:** 1.23e2
- scaled decimal:** 3.14s2
- global variable:** var
- cascade:** var := Transcript show: each class name; show: each printString].
- keyword message:** var
- return instruction:** ^ x < y

other method definition examples:
unary
+ binaryMessageArgument
keyword: arg
keyword: arg1 withTwo: arg2

<https://www.pharo.org>

Full
Syntax!

Mainly objects,
messages and lexical
closures

Temp declaration, assignment, separator and return

| a |

a := 40 + 2.

^ a

Lexical closures: Blocks

Unary messages

Date today, 9 squared

“Operators” Binary

4 + 3

‘Black’, ‘Chocolate’, ‘is good’

Keywords messages

2 between: 0 and: 10

2.betweenAnd(0, 10)

Lexical closures: Blocks

- closure definition

`[:x | x + 5]`

- closure execution

`[:x | x + 5]` value: 37

`>>> 42`

Control flow ops are messages

Weather today isRaining

ifTrue: [self takeUmbrella]

ifFalse: [self takeSunglasses]

Yes we send messages to Boolean objects

Iterators

```
#( 1 -2 -3 4 -5) collect: [:each | each abs]
```

```
>>> #( 1 2 3 4 5)
```

Yes we send messages to collection to do loops

Class / Method definition

Object << #Point

slots: { #x . #y };

package: 'Kernel'

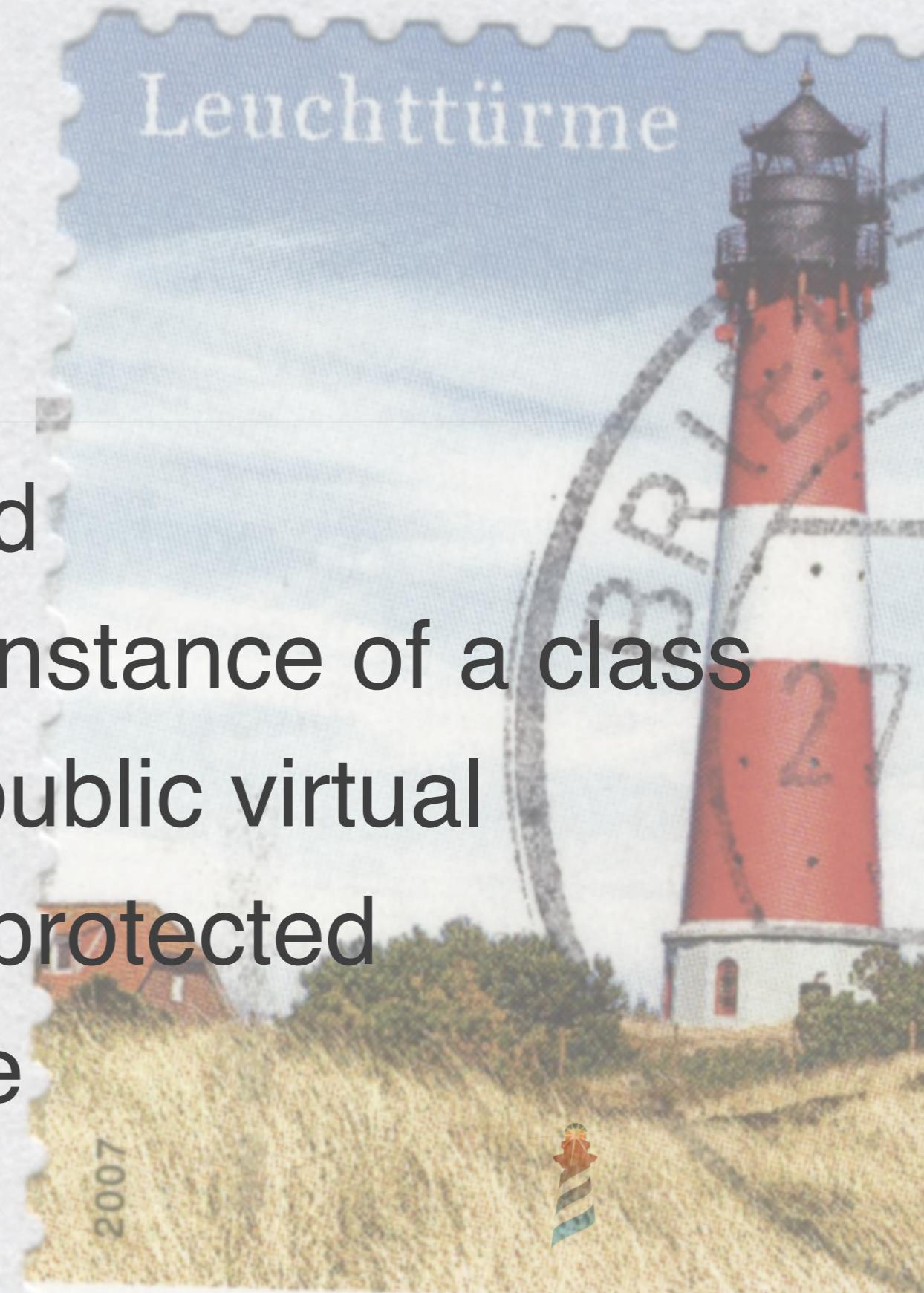
<= aPoint

"Answer whether the receiver is neither below nor to the right of aPoint."

^ x <= aPoint x and: [y <= aPoint y]

Full Model!

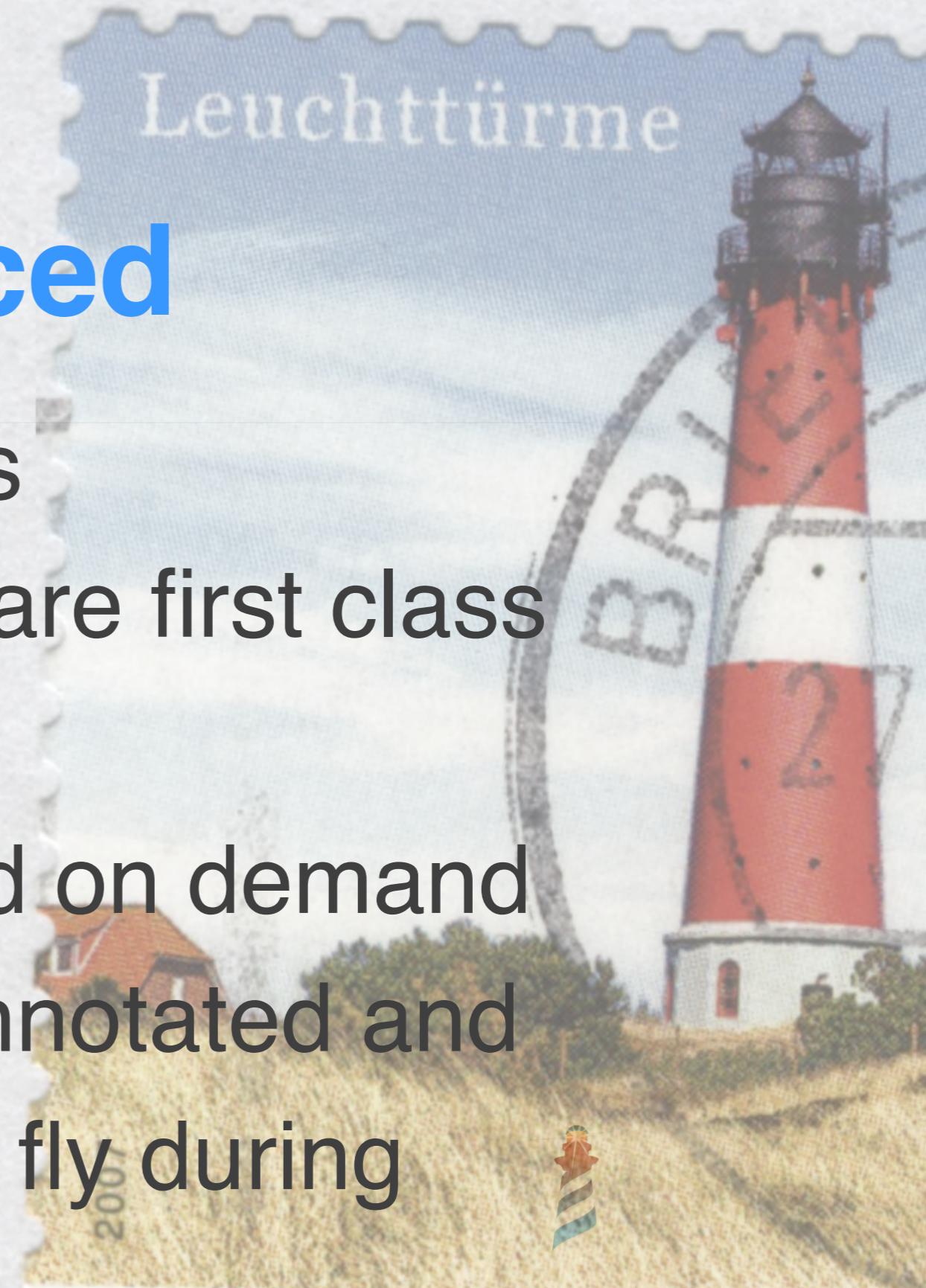
- * Dynamically typed
- * Everything is an instance of a class
- * All methods are public virtual
- * All attributes are protected
- * Single inheritance
- * Stateful Traits
- * Closures everywhere



* H Ö R N U

For the advanced

- * Classes are objects
- * Instance variables are first class
- * MOP for read/write
- * Stack can be reified on demand
- * AST can be fully annotated and transformed on the fly during execution



* H Ö R N U

Focus on intrinsic complexity

**Eliminate accidental
complexity**

A grayscale photograph of a person's hand holding a red pencil, writing on a piece of paper. A black pencil is also visible on the paper.

Fully Written in Itself

**Everything is written in Pharo
One simple syntax to rule
them all**

**Learn
Adapt
Modify**

Pharo is highly
immersive

**Most languages do not
expose much of their
internals**

Looking inside

- * Introspection is a first step
- * Pharo is fully inspectable and reflective

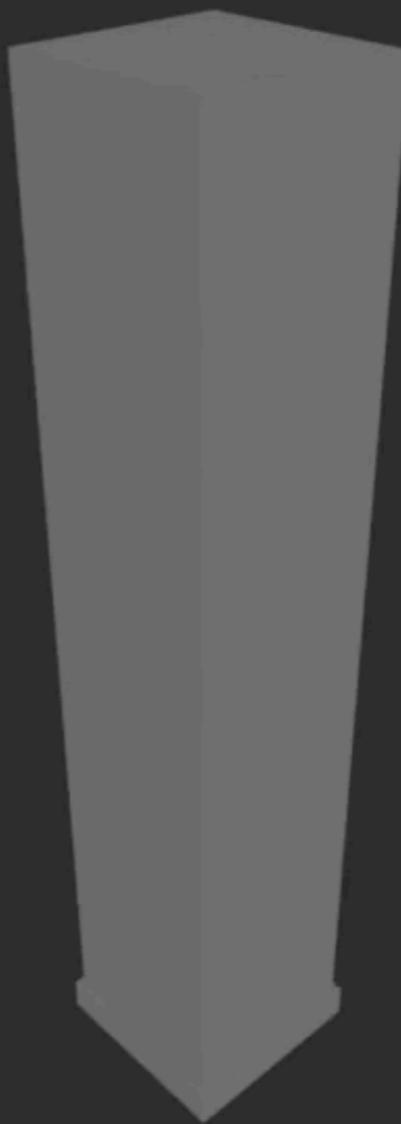
Immersed and interacting

- * You interact with objects
- * You modify objects life

Workspace

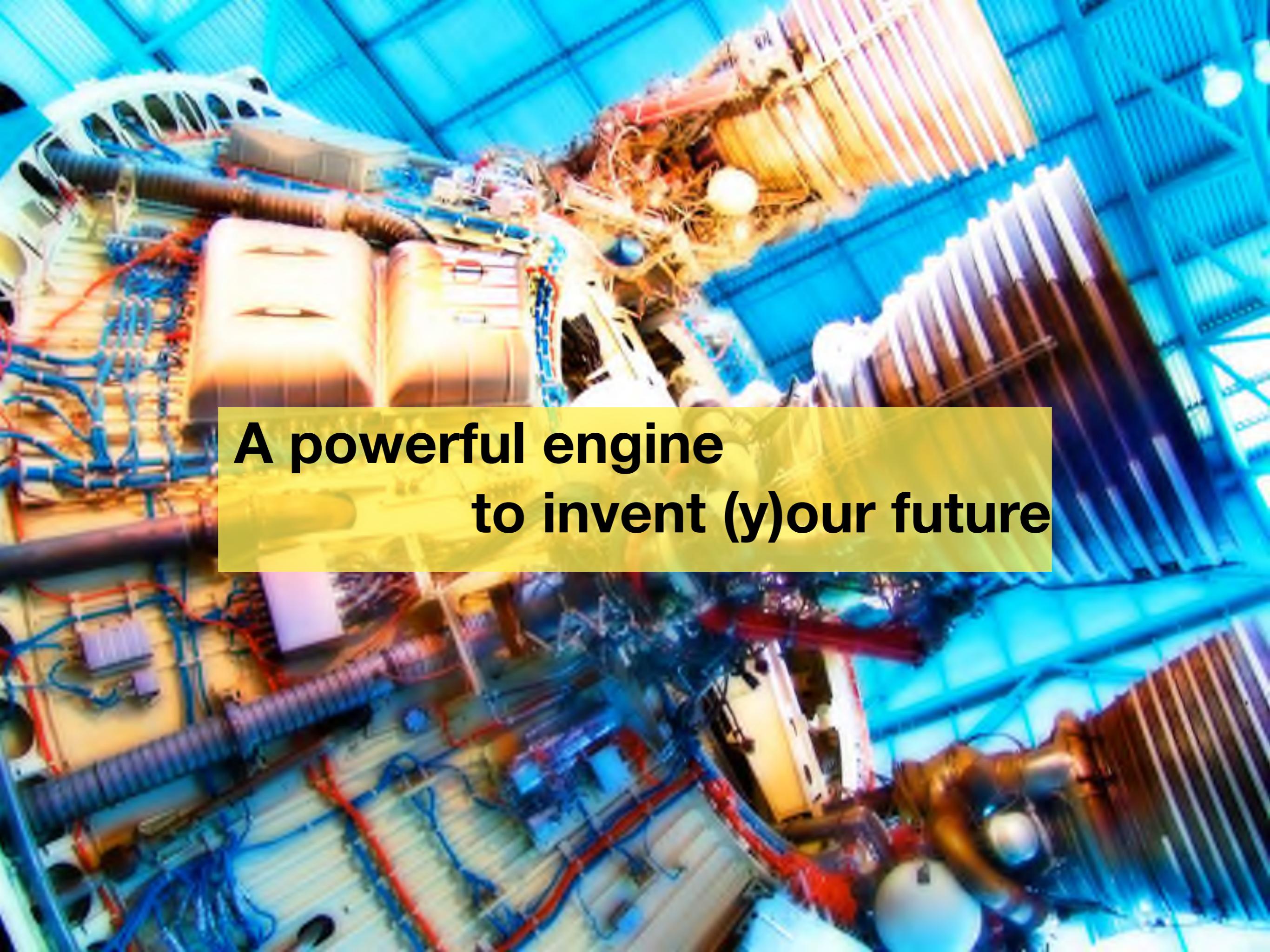
```
| elements lay |  
  
elements := (1 to: 5) collect: [ :ob |  
  (R3CubeShape new) elementOn: ob ].  
    
  lay := R3WallLayout new.  
  lay on: elements.  
  
UberPresenter present: elements
```

Uber Presenter



**We can do the same
with web app, sockets,
networks, sensors,
living programing....**

Pharo's goal...

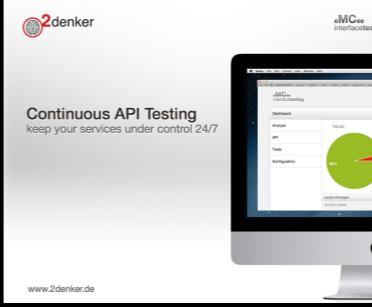
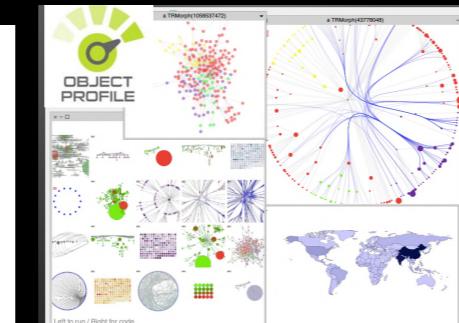
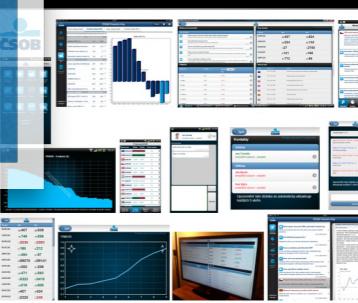
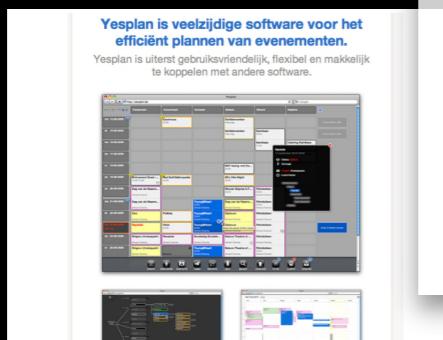
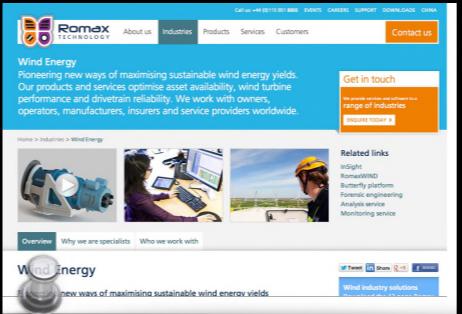
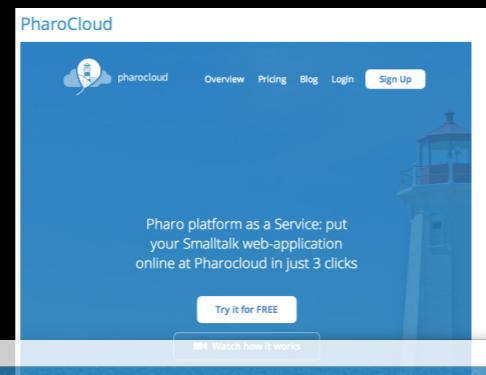
A photograph of a large, multi-cylinder industrial engine or turbine. The engine is painted white and features various mechanical components like belts, pulleys, and piping. A bright yellow rectangular overlay covers the center of the image, containing the following text:

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

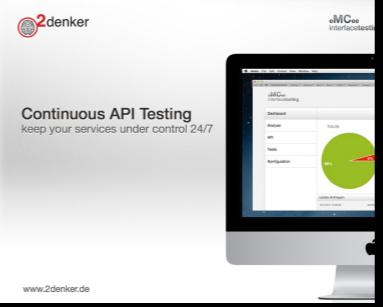
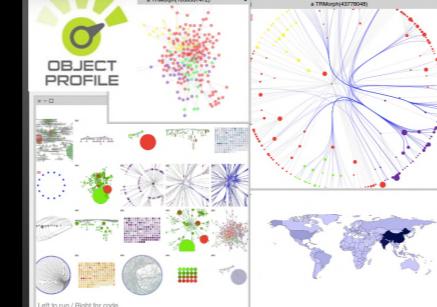
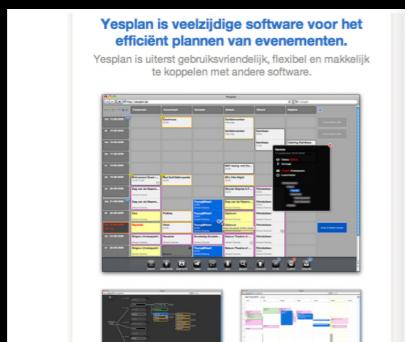
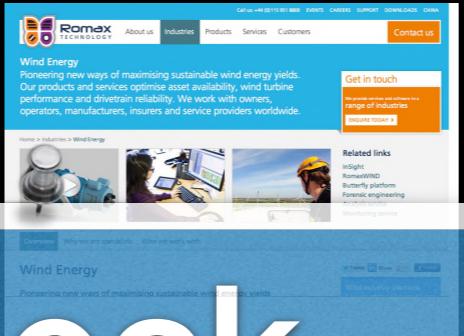


**An ecosystem where
innovation/business bloom**

Some Success Stories



Check http:// pharo.org/ success



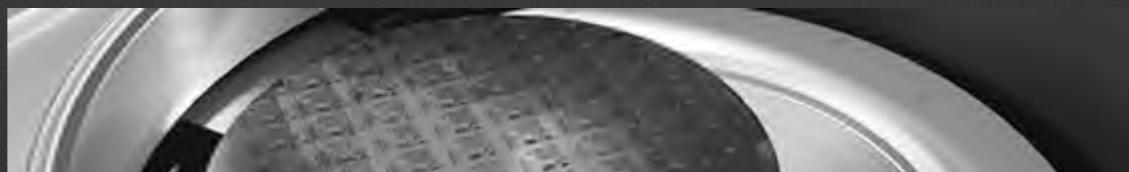
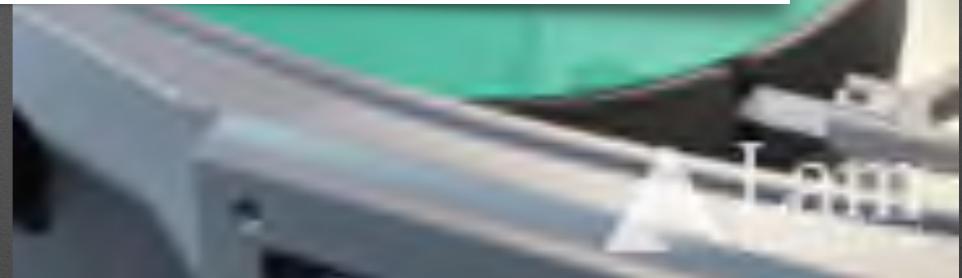
LAMRC

Back-End Wafer-Level Packaging



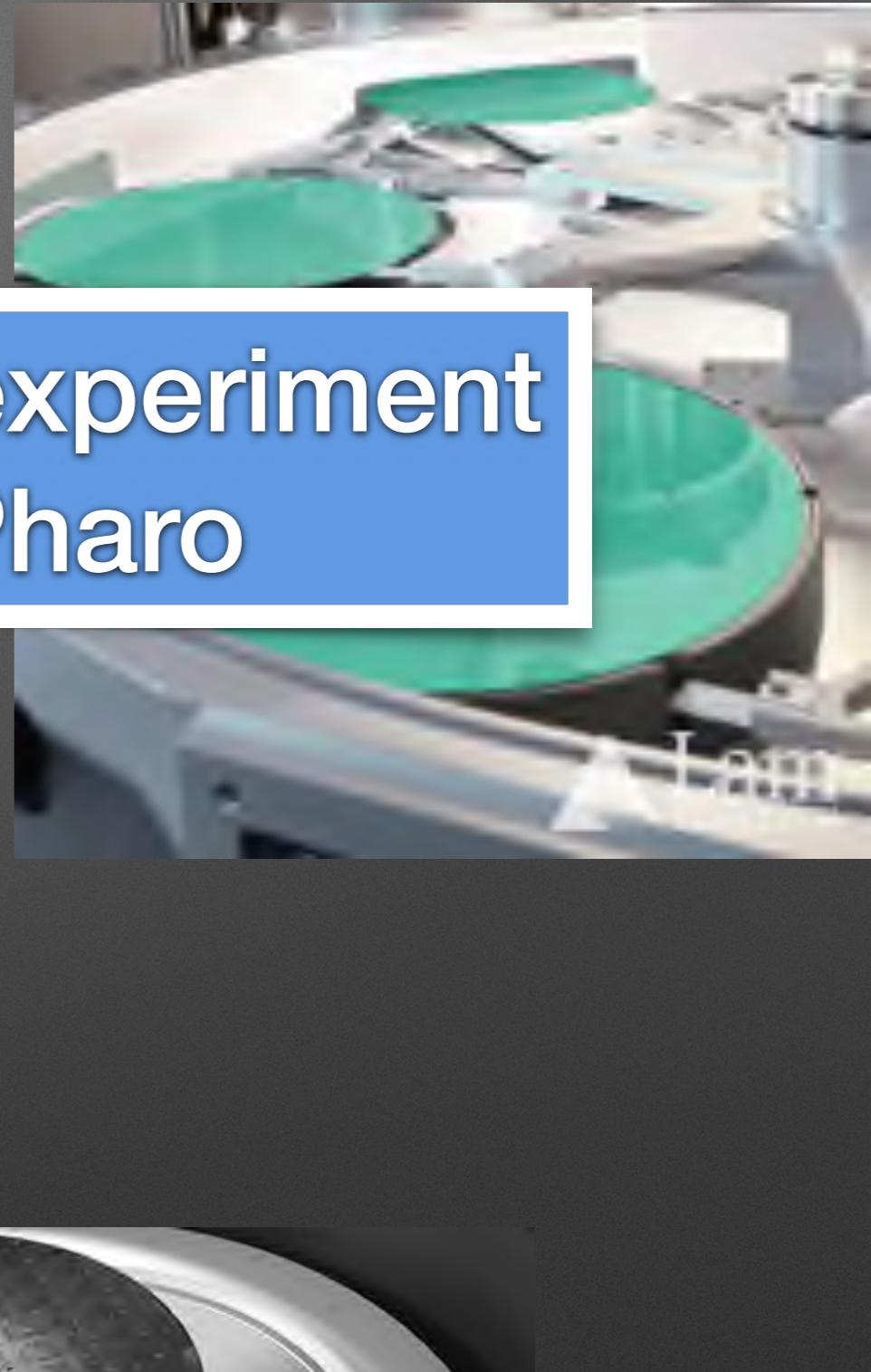
50% microprocessors
of your mobile/PC/tablet

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



LAMRC

Back-End Wafer-Level Packaging



Started to experiment
with Pharo

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

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

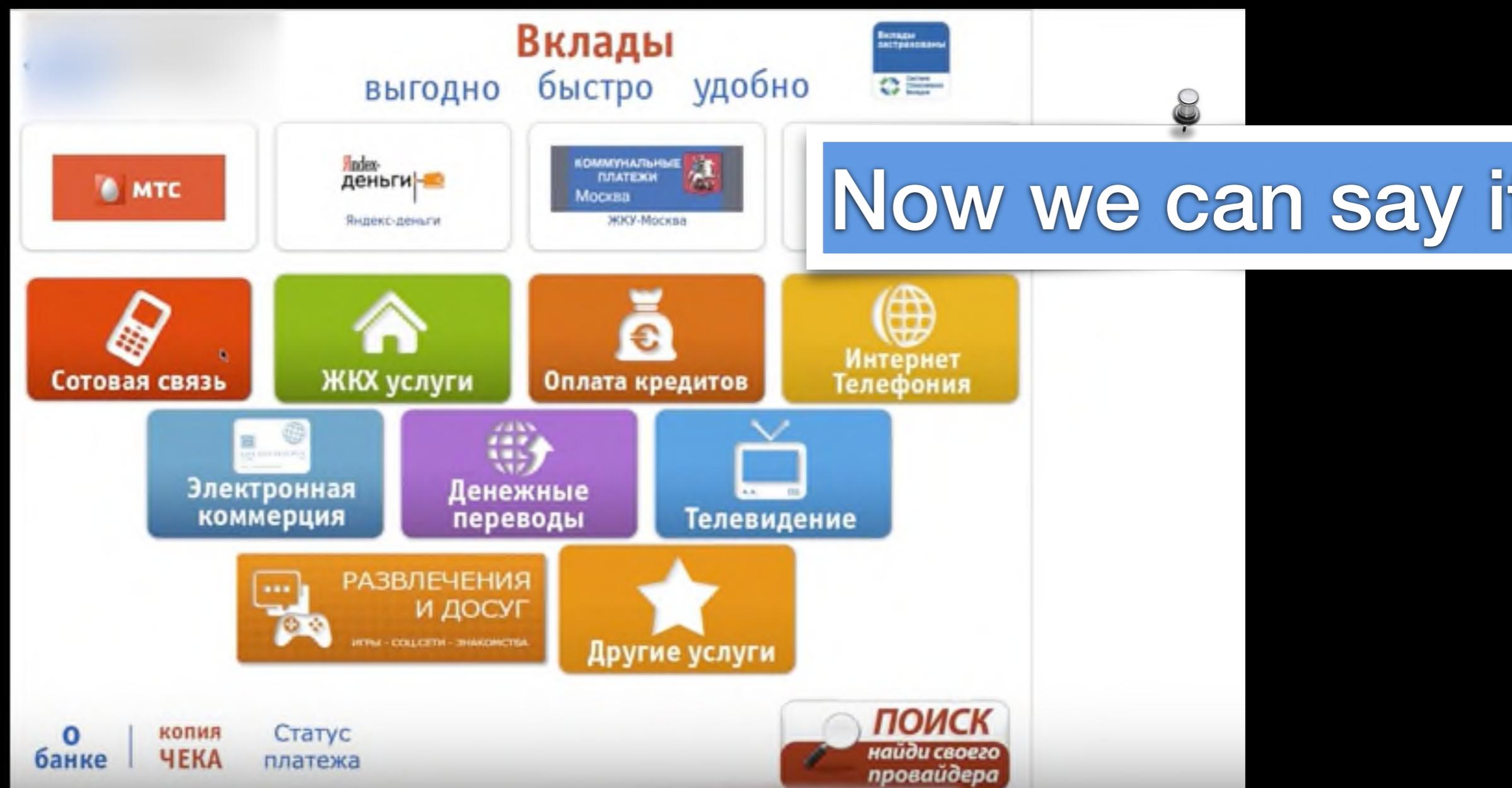
authorized users

Migrating to
Pharo

30 Millions lines of code...

Kent Beck is one of the
founders

Pharo in ATM like Device in Moscow



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ALLSTOCKER

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Used by over 30,000 Companies Monthly

Find Machines

Q Search by Category

Construction Machinery

Mini Excavators	Excavators	Wheel Loaders	Dozers	
Cranes	Rollers	Graders	Finishers	
Generators	Welders	Compressors	Small Items	Other Construction Machineries

Material Handling

Forklifts

Farm Machinery

Tractors

Vehicles

Dumps	Trucks	Other Vehicles
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Others

Attachments	Parts	Others
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Q Search by Keyword

Enter a keyword (e.g. KOMATSU PC200)

Search

New Machines Updated on: 2016/09/13 17:46:18 (JST)

See More >

HOKUETSU PDS175S 400,000 JPY 4573

KUBOTA U-55-6 3,500,000 JPY 2015 330

OTHER MGR2500 133,100 JPY 0

ISEKI HL407G 198,000 JPY 0

OTHER MR6500 143,000 JPY 0

OTHER GH250-GML 165,000 JPY 0

Full Stack in
Pharo
Online
marketplace
raised 4.7 M\$

Network Monitoring for small ISPs

The collage illustrates various network monitoring tools and interfaces:

- Top Left:** A screenshot of a web-based monitoring dashboard for a small ISP. It shows a map of a location with a red warning icon, a large red circular gauge indicating 95% capacity at 500 Mbps, and several green status boxes for CMTS, Switch, Modems connected, Router, and Server.
- Top Center:** A smartphone displaying a mobile version of the same monitoring interface, showing a green checkmark for "Tout est en ordre avec Supervision Talange".
- Top Right:** A screenshot of a web-based HFC supervision interface titled "Supervision HFC". It lists various HFC components and their status, with a large green heatmap showing performance metrics across multiple locations.
- Middle Left:** A detailed view of a CMTS equipment page showing hardware components like SLOT 0, SLOT 1, and SLOT 2, along with temperature and system status monitoring.
- Middle Right:** A screenshot of a CMTS equipment page showing a detailed tree view of hardware components and a "Façade de l'équipement" diagram illustrating the physical layout of the equipment.
- Bottom Left:** A screenshot of a CMTS equipment page showing a detailed tree view of hardware components and a "Façade de l'équipement" diagram illustrating the physical layout of the equipment.
- Bottom Right:** A screenshot of a CMTS equipment page showing a detailed tree view of hardware components and a "Façade de l'équipement" diagram illustrating the physical layout of the equipment.



pharocloud

Overview

Pricing

Help&Docs

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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



CMSBOX Bearbeiten Hinzufügen Clipboard Aktionen Diese Seite sofort Publizie

Neue Seite Artikel Formular Tabelle

SYSTEM

WEBSEITE Bearbeiten Metatags Statistik Archiv

BENUTZER

SUPPORT

CMS with full history

Das Content Management System

100% Inline-Editor

Die cmsbox ist ein Content Management System der nächsten Generation. Die Benutzeroberfläche ist nahtlos in die Webseite integriert: Alle Texte werden direkt auf die Seite geschrieben! 

Drag & Drop 
Handlich: Boxen und Elemente frei auf der Seite positionieren.
 mail@cmsbox.com

Copy / Paste
Elemente ausschneiden oder kopieren und irgendwo auf der Webseite wieder einfügen.

Text einfügen 

 cmsbox rocks

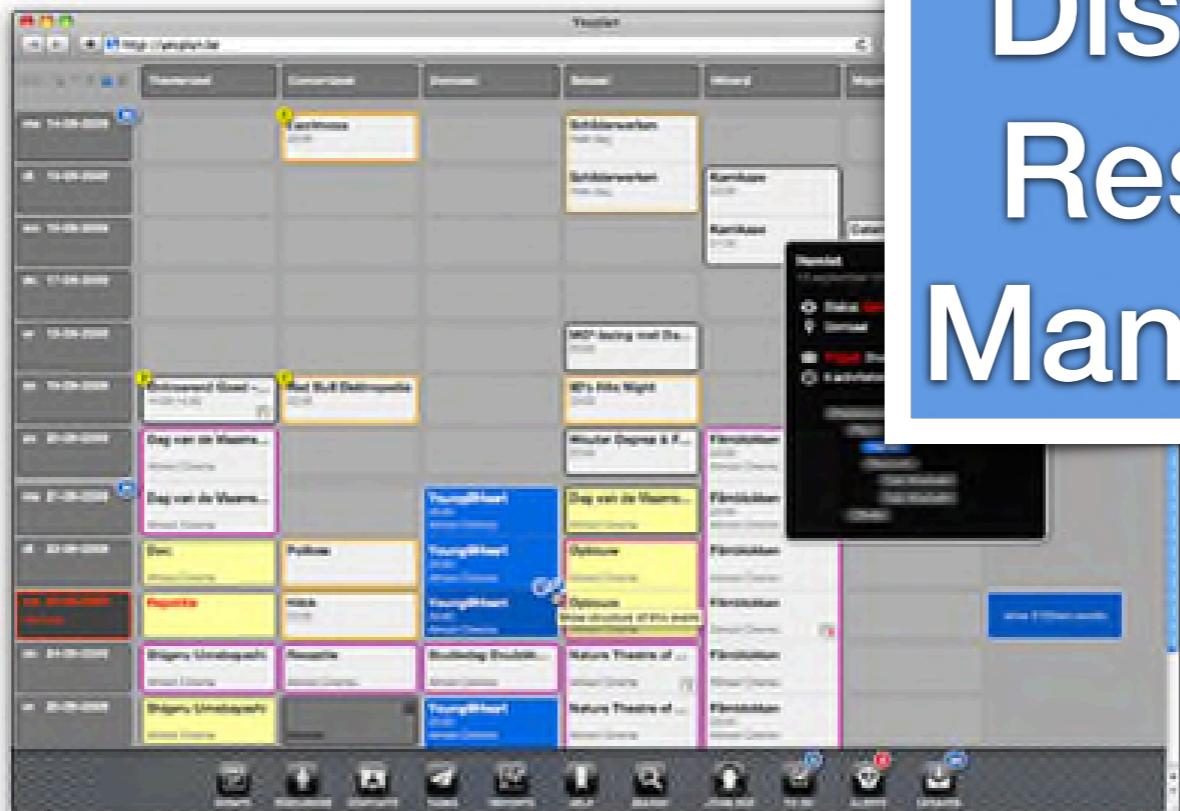
Eigene Bilder und Videos direkt auf die Webseite laden

CMSBOX GMBH · TERRASSENWEG 18 · CH-3012 BERN · +41 (0)31 356 42 82 Suchen...

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





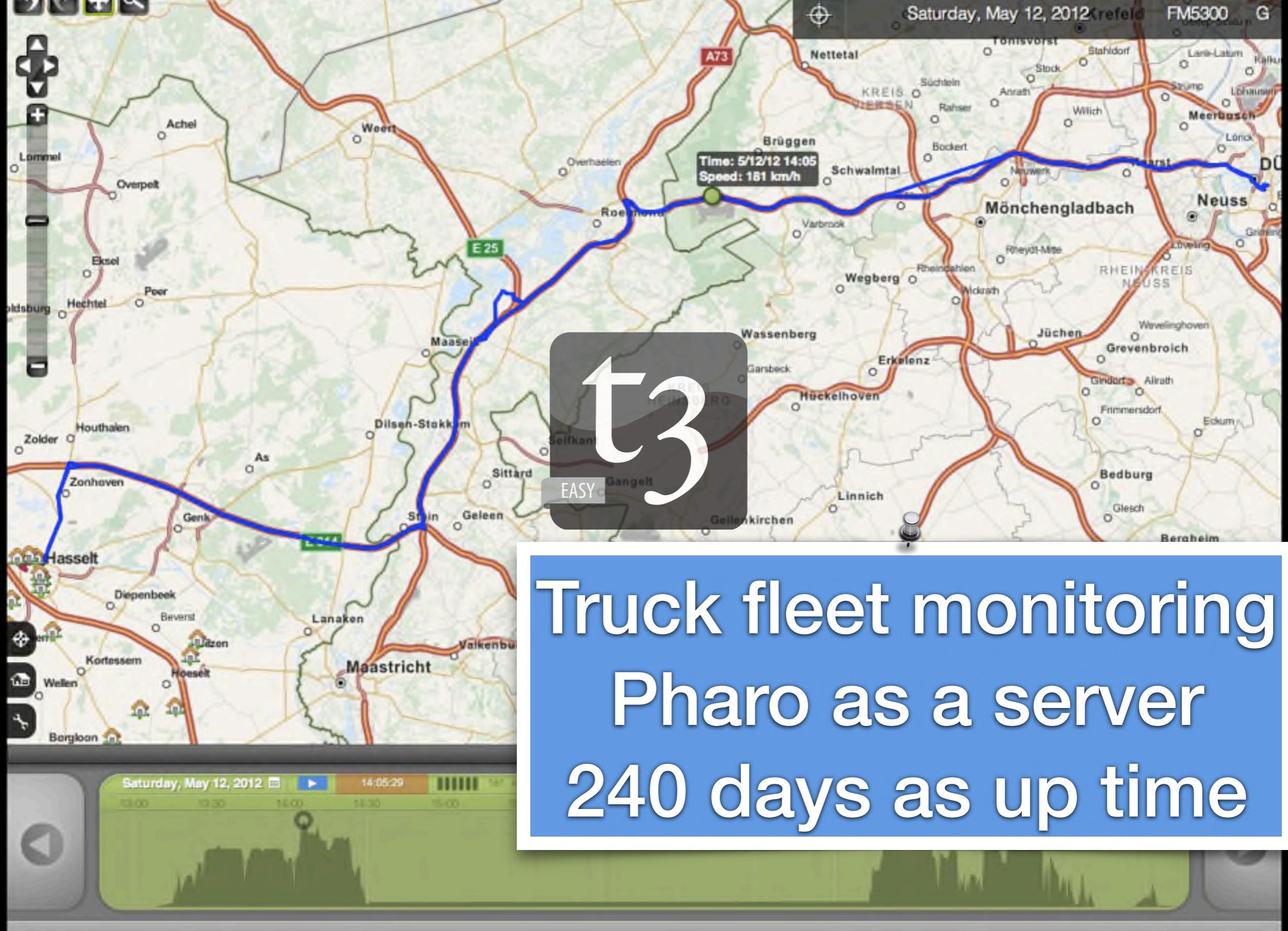
eMCee
Interfacetesting

Server Testing

Continuous API Testing
keep your services under control 24/7



www.2denker.de



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

WEBDRUCK.CH

Web-To-Print Solution

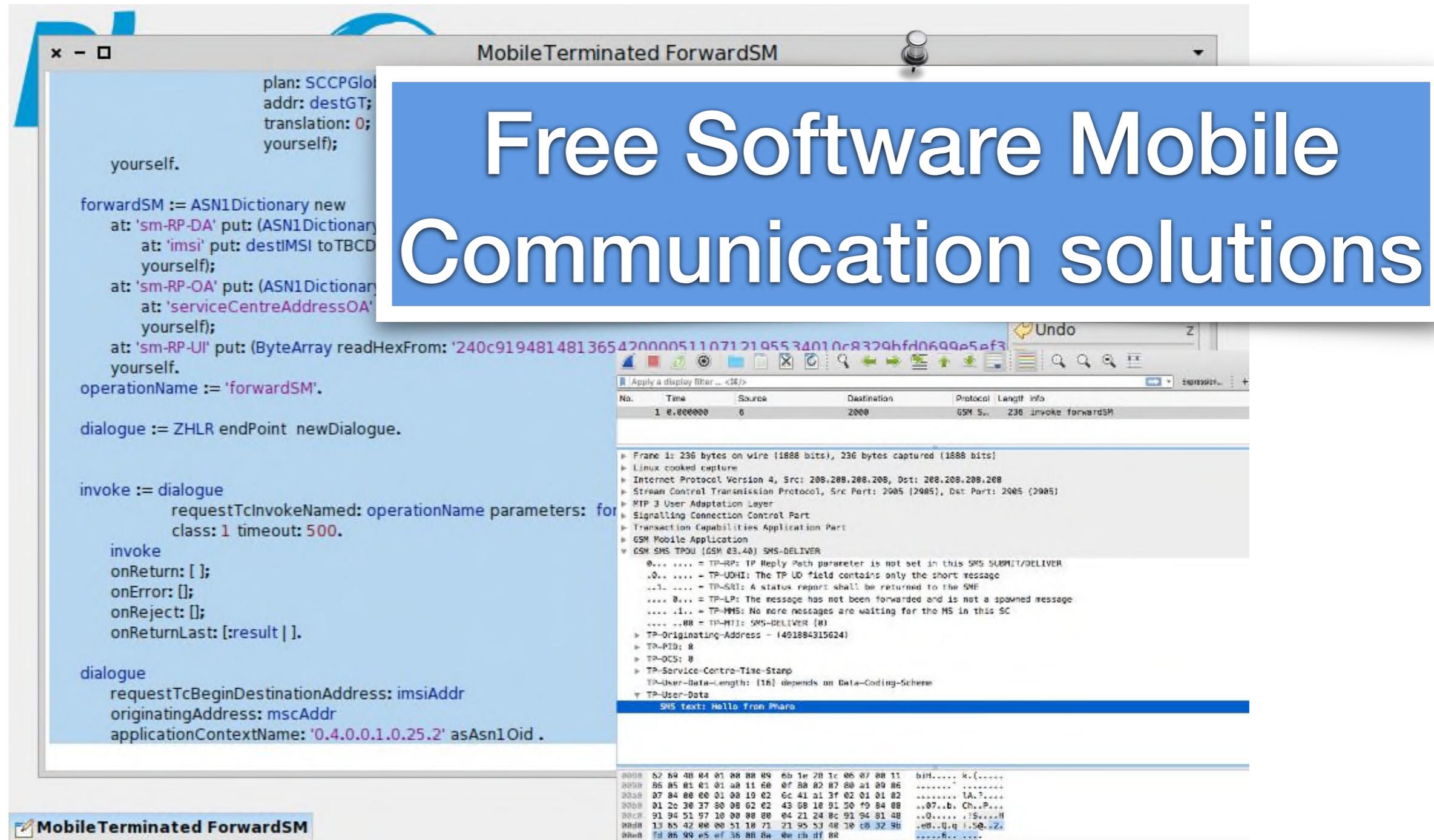
- Design and create individual printed matter
- eShop with credit card payment
- High quality PDF output with Printing Process integration
- Thousands of orders for seven Swiss printing companies



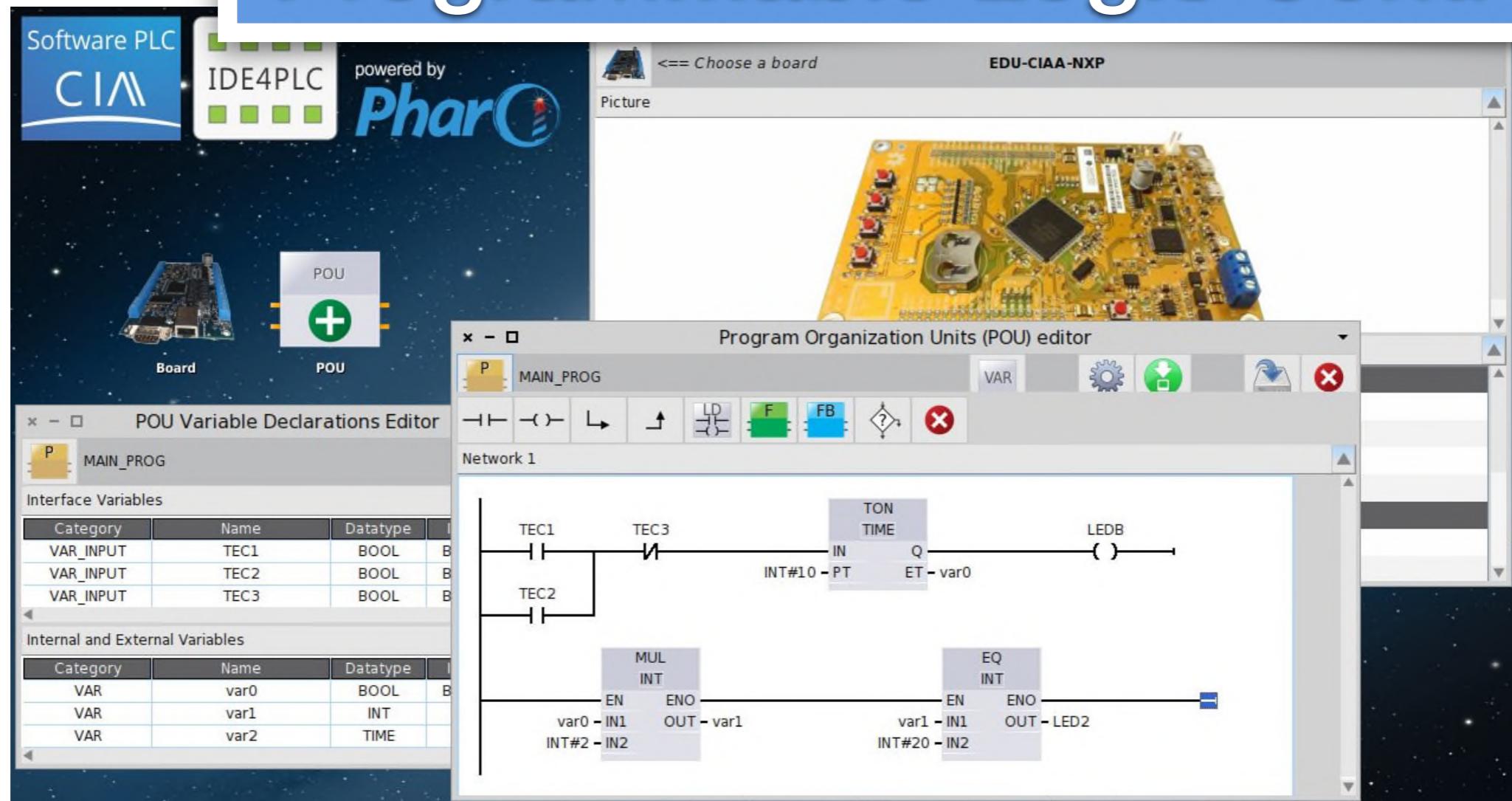
All reports are automatically generated

Quuve: Investment Portfolio

<http://debrispublishing.com>



Programming environment for Programmable Logic Controllers





NTed: disaster scenario recovery

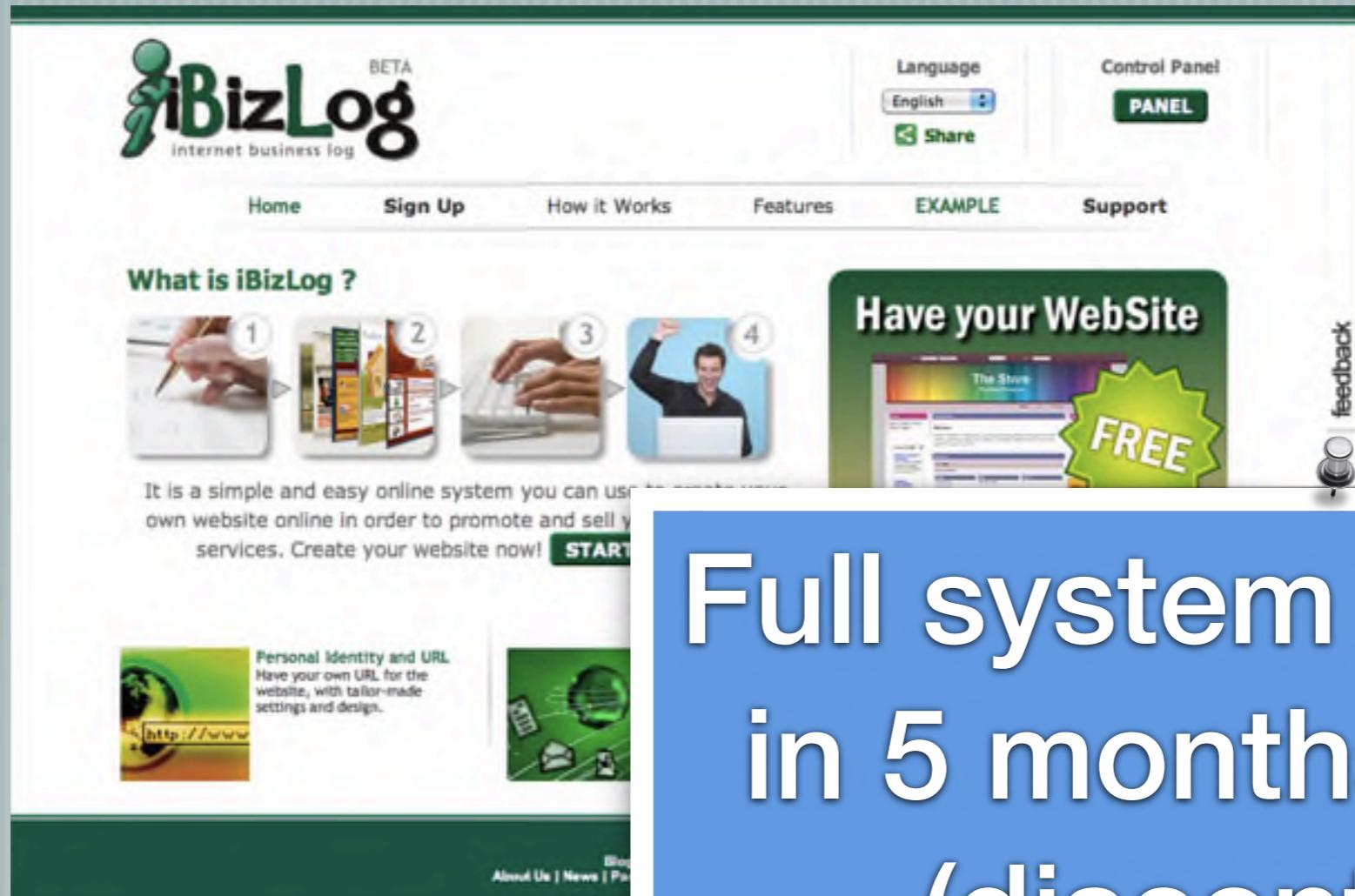
NTed

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	

To simulate disaster response

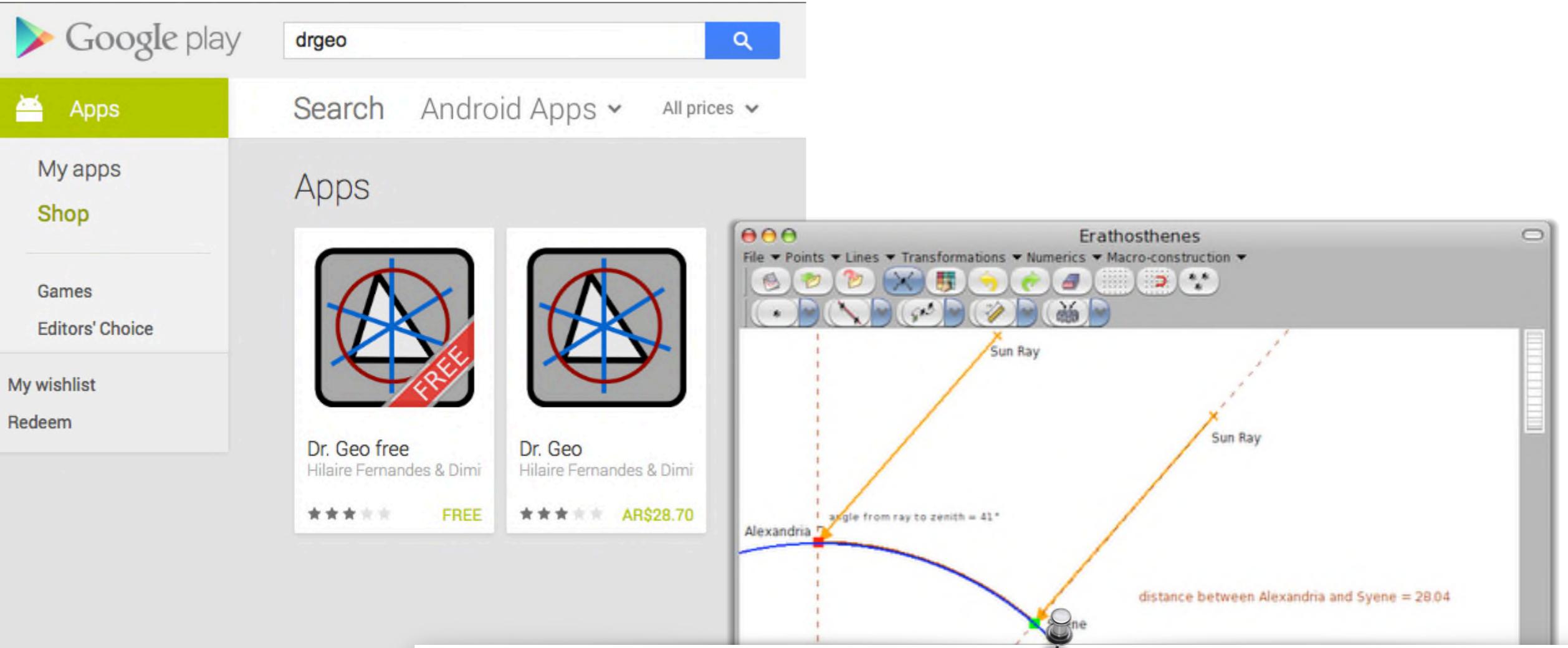
Patient 11	Betroffener	Betroffener	SK III	W5UR	
------------	-------------	-------------	--------	------	--

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



Full system developed
in 5 months one developer
(discontinued)

A product by [Smartworks](#)



Works on linux, mac, windows,
android, OLPC

Select and move an object.

Moose technology: Home

www.moosetechnology.org Reader

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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

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

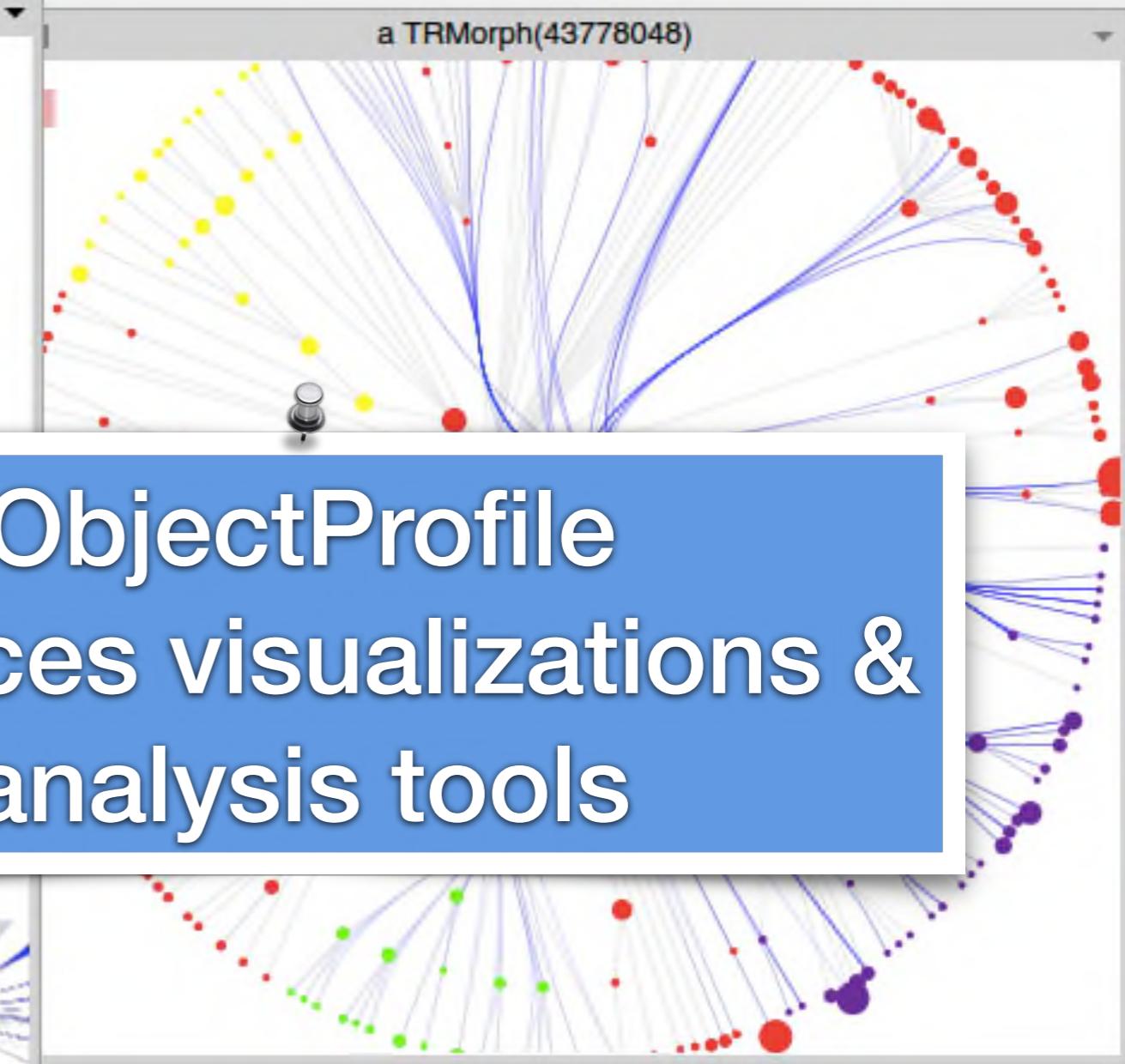

enables


Sophisticated analysis platform more than 200 men/years

Contact us Report an issue Site powered by Pier

Pha

ObjectProfile produces visualizations & analysis tools



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HOME FEATURES TRAINING & SUPPORT PRICING

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

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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.

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▶ YOUR ADDED VALUE

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▶ YOUR ADDED VALUE

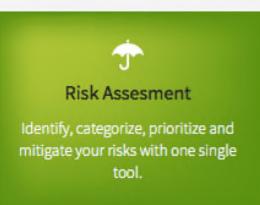
3 CHEAPER

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It provides an intelligent and complete approach for all sustainable maintenance.

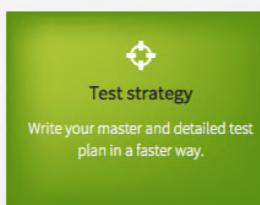
▶ YOUR ADDED VALUE

COMPONENTS



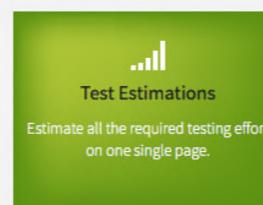
Risk Assessment

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



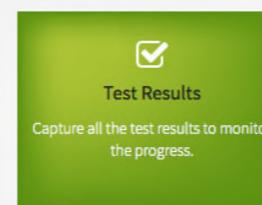
Test strategy

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



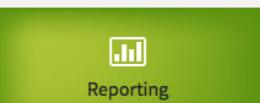
Test Estimations

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

Digitalizing business



Home

Why web-based software?

Plans and Pricing

english português español



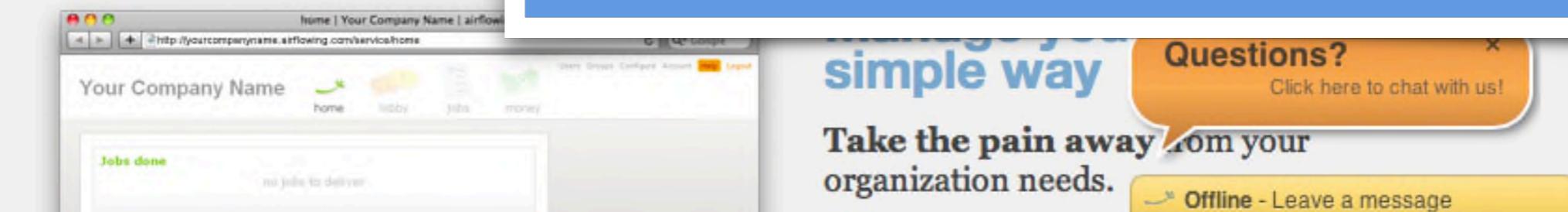
Organize your creative work

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

Plans and Pricing

14-day free trial for all plans
sign up in 60 seconds

Deployed business model did not work





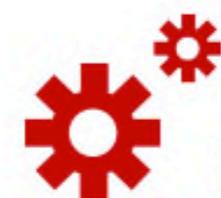
Can develop a complex analysis in 3 months

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

Spesenfuchs



Spesenfuchs ist eine Reisekostensoftware für jedermann. Einfach, schnell und kostenlos. Alle Pauschalen und gesetzlichen Regelungen sind hinterlegt. Es ist keine Registrierung notwendig!

Reisekosten clever abrechnen >



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Wind Energy

Pioneering new ways of maximising sustainable wind energy yields. Our products and services optimise asset availability, wind turbine performance and drivetrain reliability. We work with owners, operators, manufacturers, insurers and service providers worldwide.

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We provide services and software to a range of industries

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Wind Energy

Pioneering new ways of maximising sustainable wind energy yields

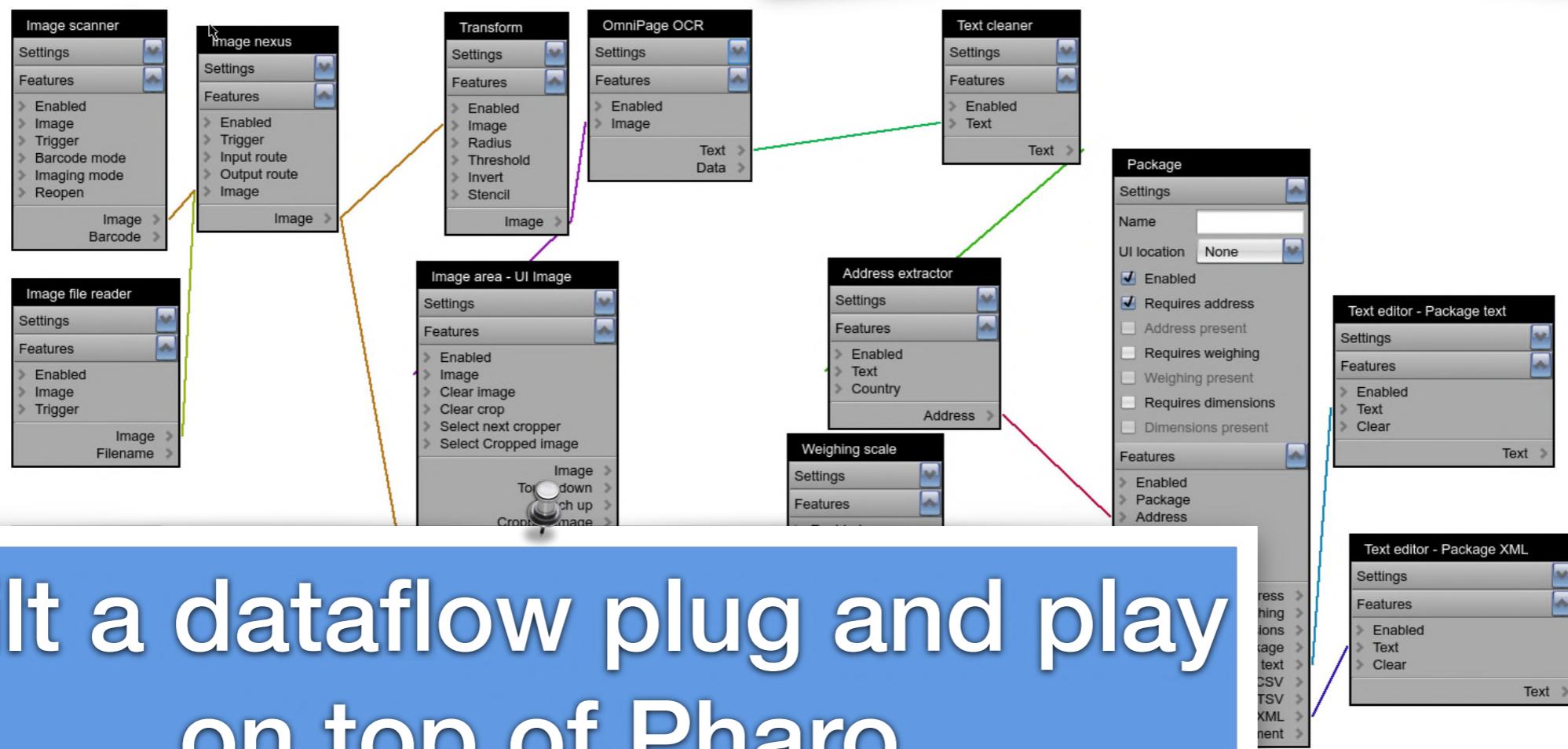
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Wind industry solutions

Download the white paper [here](#)



Handle return mails in Switzerland



Built a dataflow plug and play
on top of Pharo

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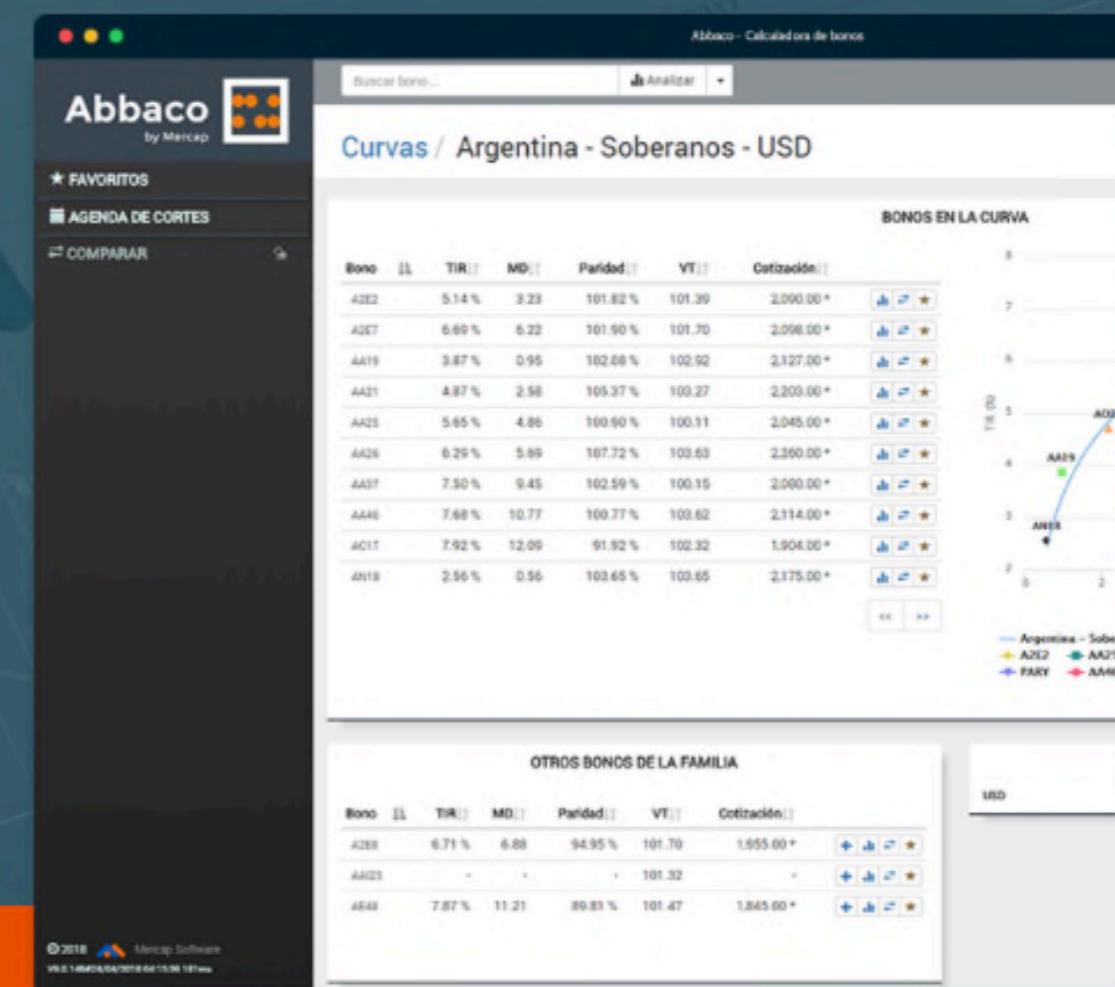
4G LTE coverage

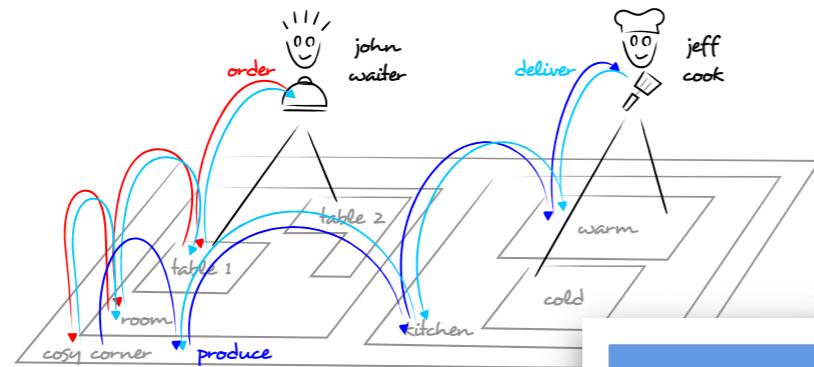


Bond calculator for experts investors

Your own research tool for
making intelligent decisions.

from Argentina



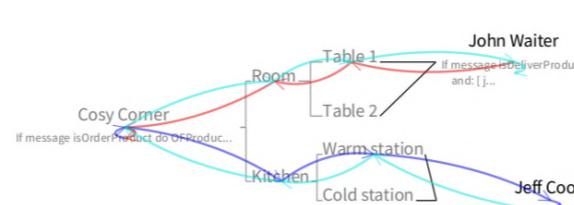


feenk

Help growing startups Get back control on software

Playground

```
"CONTRIBUTORS"
jeffcook := OFCookActor new name: 'Jeff Cook'.
johnWaiter := OFWaiterActor new name: 'John Waiter'.
"AREAS"
cosyCorner := OFVenueActor new name: 'Cosy Corner'.
kitchen := ORoomActor new name: 'Kitchen'; parentArea: cosyCorner.
warmStation := OKitchenActor new name: 'Warm station'; parentArea: kitchen; addContributor: jeffCook.
coldStation := OKitchenActor new name: 'Cold station'; parentArea: kitchen; addContributor: jeffCook.
room := ORoomActor new name: 'Room'; parentArea: cosyCorner.
table1 := OTTableActor new name: 'Table 1'; parentArea: room; addContributor: johnWaiter.
table2 := OTTableActor new name: 'Table 2'; parentArea: room; addContributor: johnWaiter.
"PRODUCTS"
steak := OFProduct new name: 'Steak'; characteristics: {OPFWarm}.
sandwich := OFProduct new name: 'Sandwich' ; characteristics: {OPFCold}.
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
```

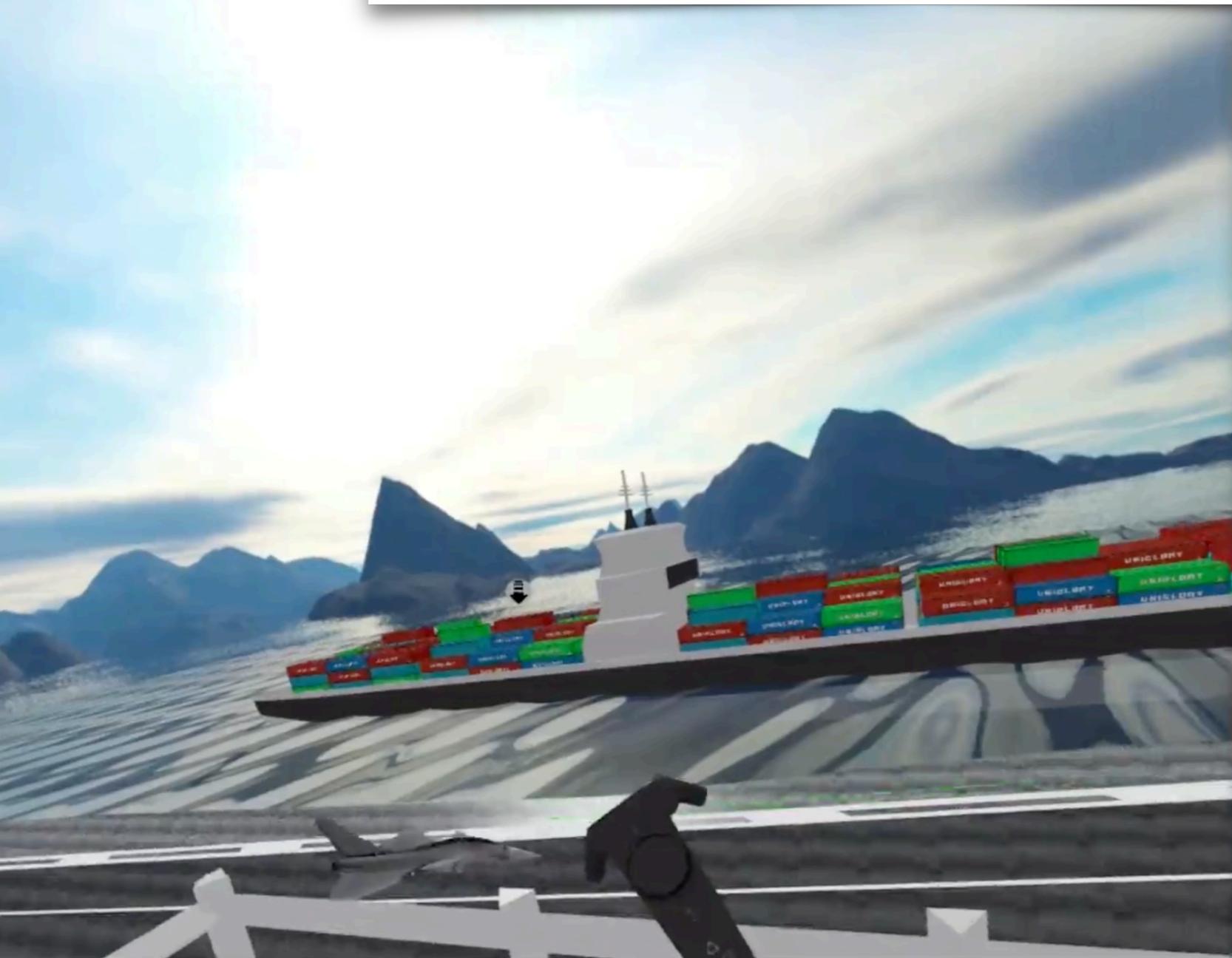


falcon / business-foundation / business-core / src / test / java / com / feenk / falcon / CosyCornerPlaceOrderTest.java

```
Order order = cosyCorner.createOrder(cosyCorner.cheeseBurger, quantity); order: "Order@93cf163@a0fd404f, type='order', id='d... PlaceOrderMessage placeOrderMessage = cosyCorner.createPlaceOrderMessage(order); placeOrderMessage: "_PlaceOrderMessage@1852a... placeOrderMessage, from(cosyCorner.johnWaiter), sendTo(cosyCorner.table1);
```

Loaded classes are up to date. Nothing to reload. (a minute ago)

Thales prototyping VR



Dharni

Playground

raftCarrier open.]

tmp

OVRWDemoAircraftCarrier

Scoped Variables History Navigator

Type. Pkg1/*Pkg2/Pk.

ProtoObject

Object

WDApplication

WDFPSEExample

OVRWEmptyExample

OVRWExample

OVRWDemoAircraftCarrier

OVRWDemoPickir

OVRWExampleCo...

-- all --

event handling

initialize

menu

scene content

updating

addAbeilleBourbon

addBarrel

addBoxes

addCargo

addCharlesDeGaulle

addHawkeye

addHelicopter

addObjectAt:orientation:

addPlayableAreaToScene

addRadar

History Navigator

Hier. Class Com.

OVRWEExample 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]
```

Controls:

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

Helpful?

Helpful?

Helpful?

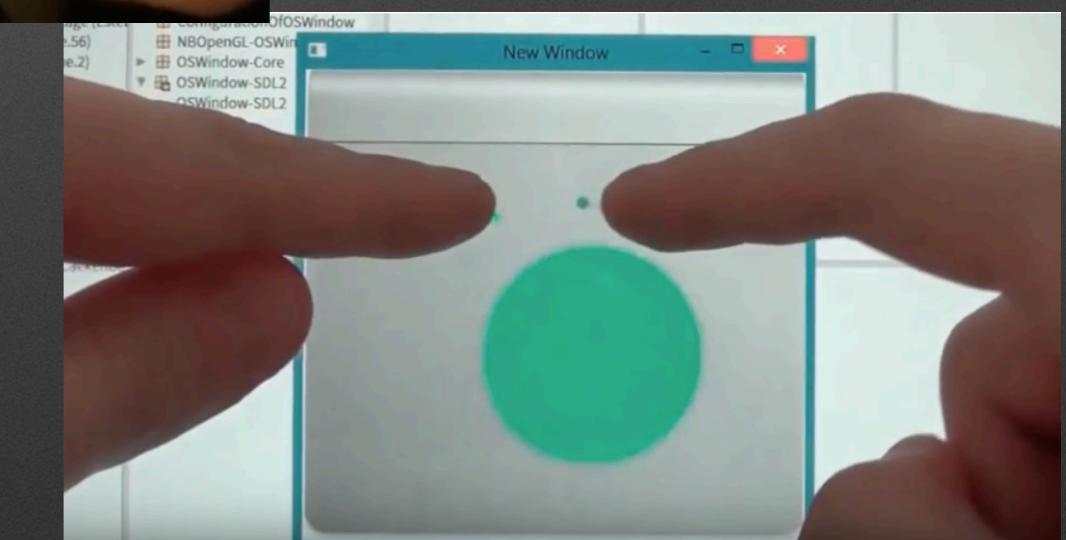
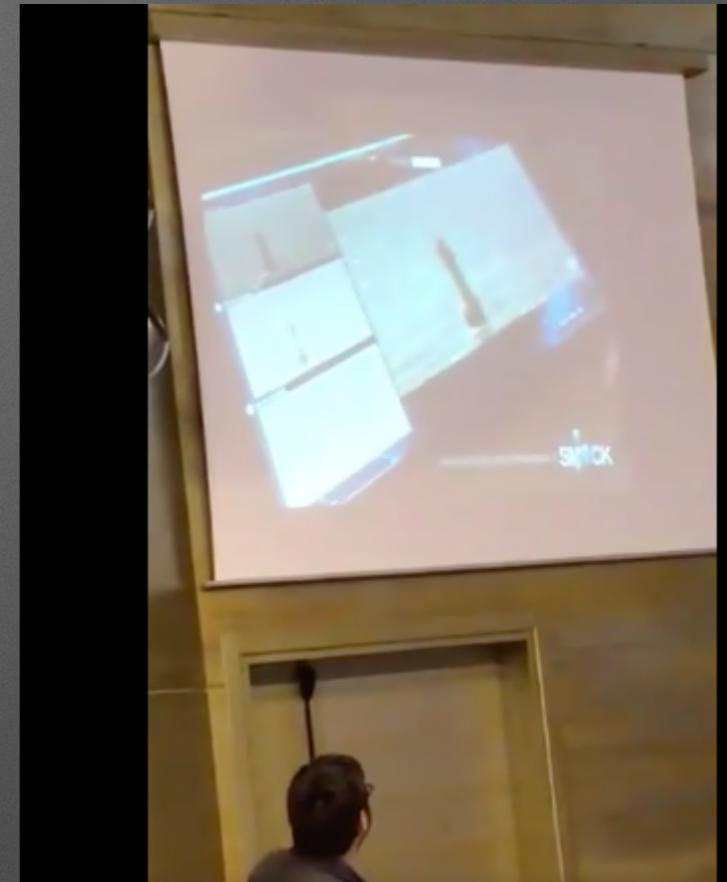
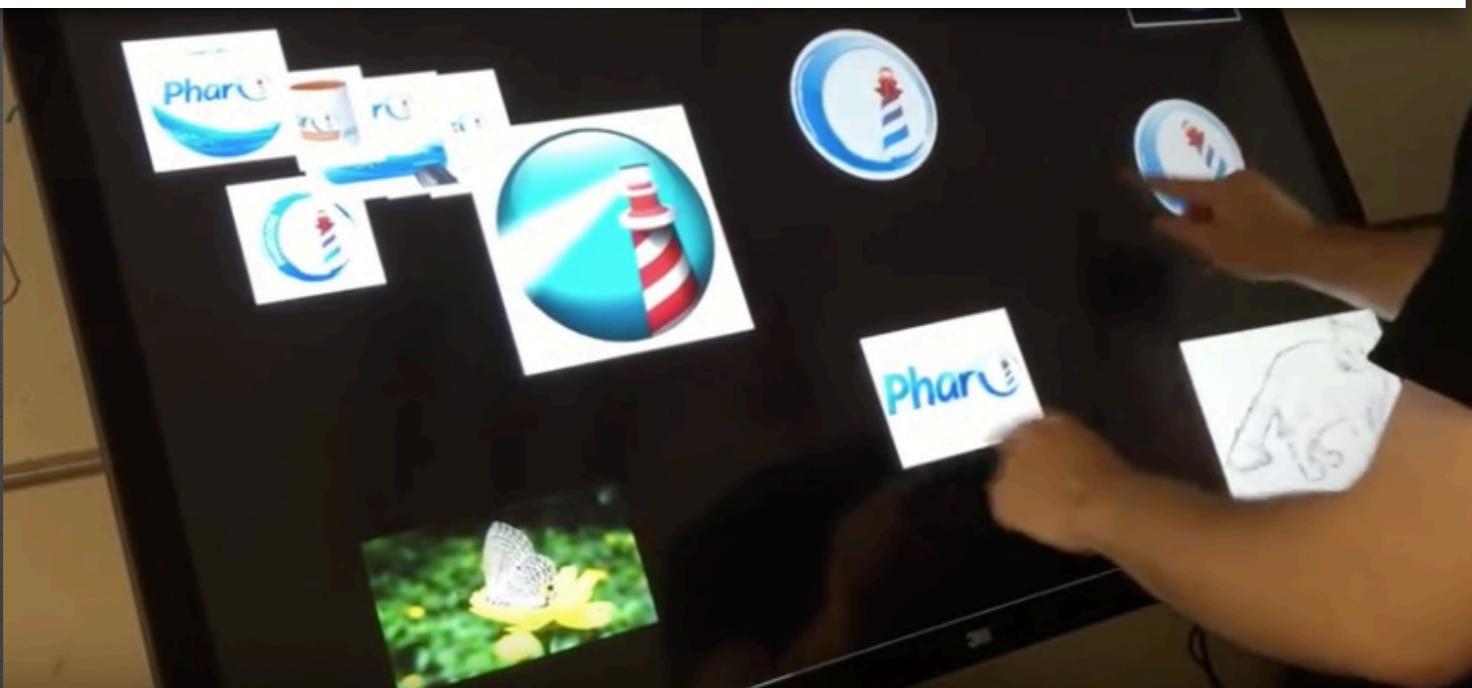
Class not referenced ? X

[dynamicsWorld] Instance variables not read AND written ? X

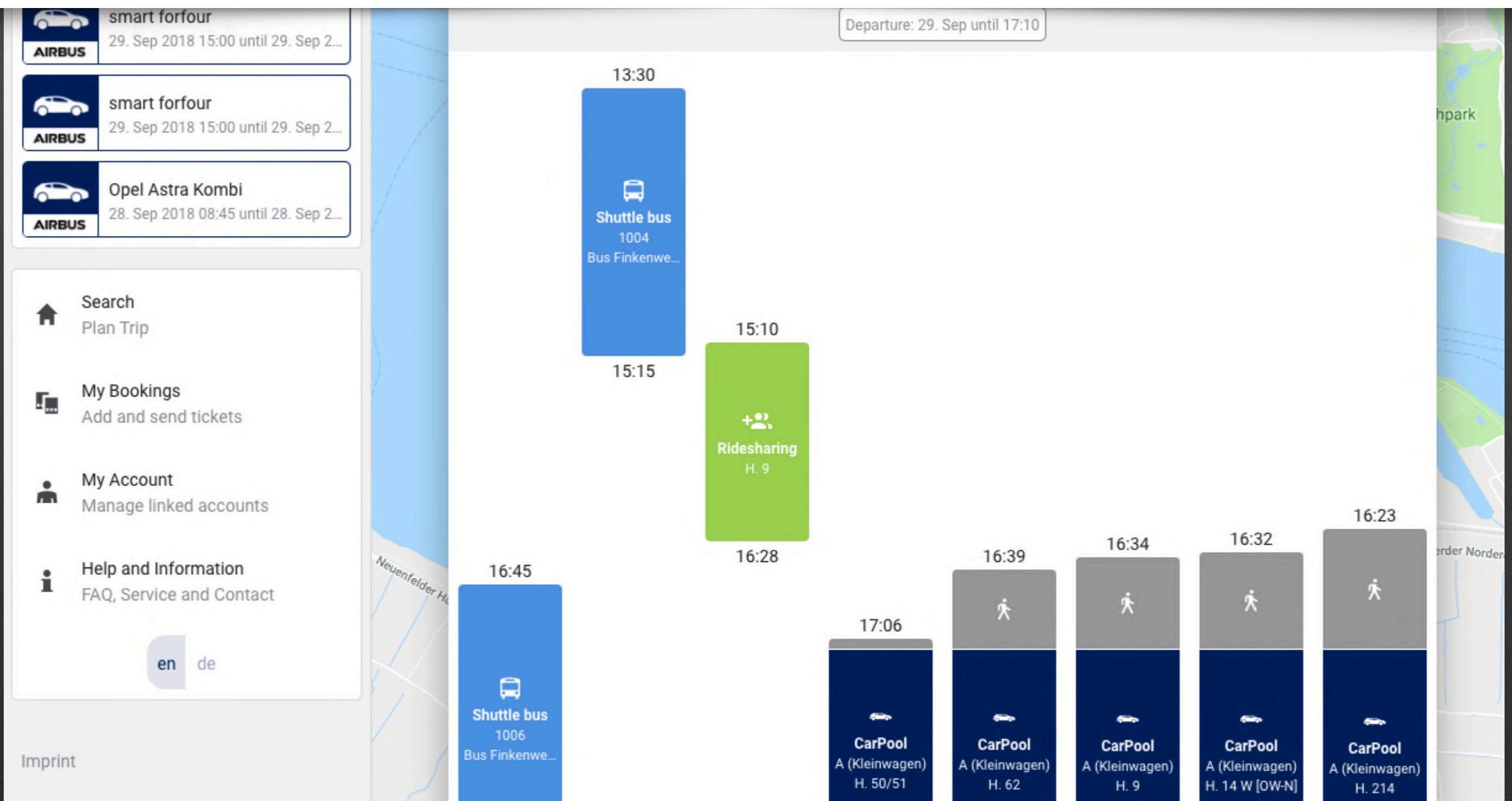
[dynamicsWorld] Variables not referenced ? X

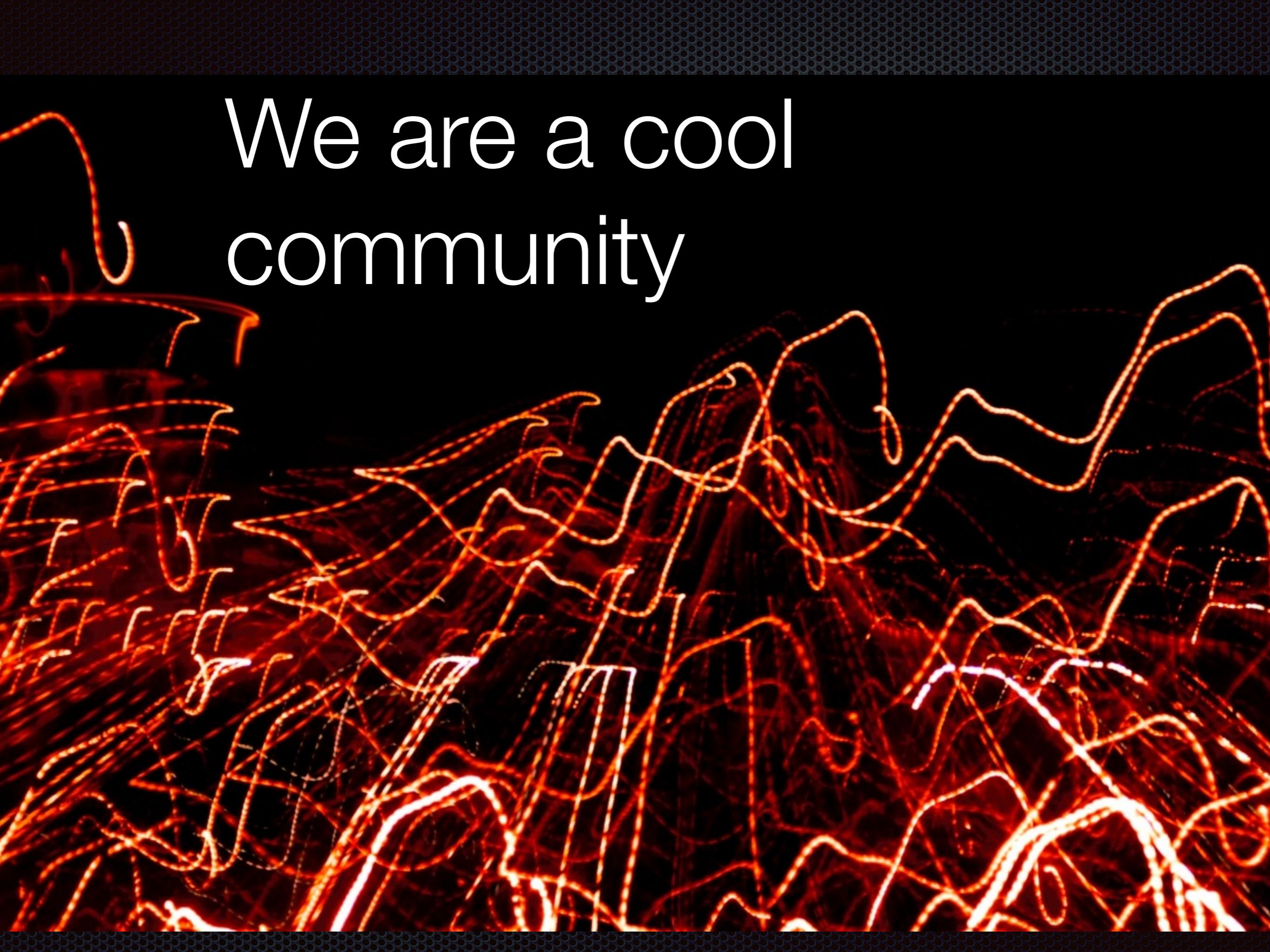
OVRWDemoAircraftCarrier Playground

Thales prototypes advanced interaction design



Mobility Map: a broker for mobility services multi-modal routing search docker running dozens of pharo





We are a cool
community

Some Pharo's Teachers

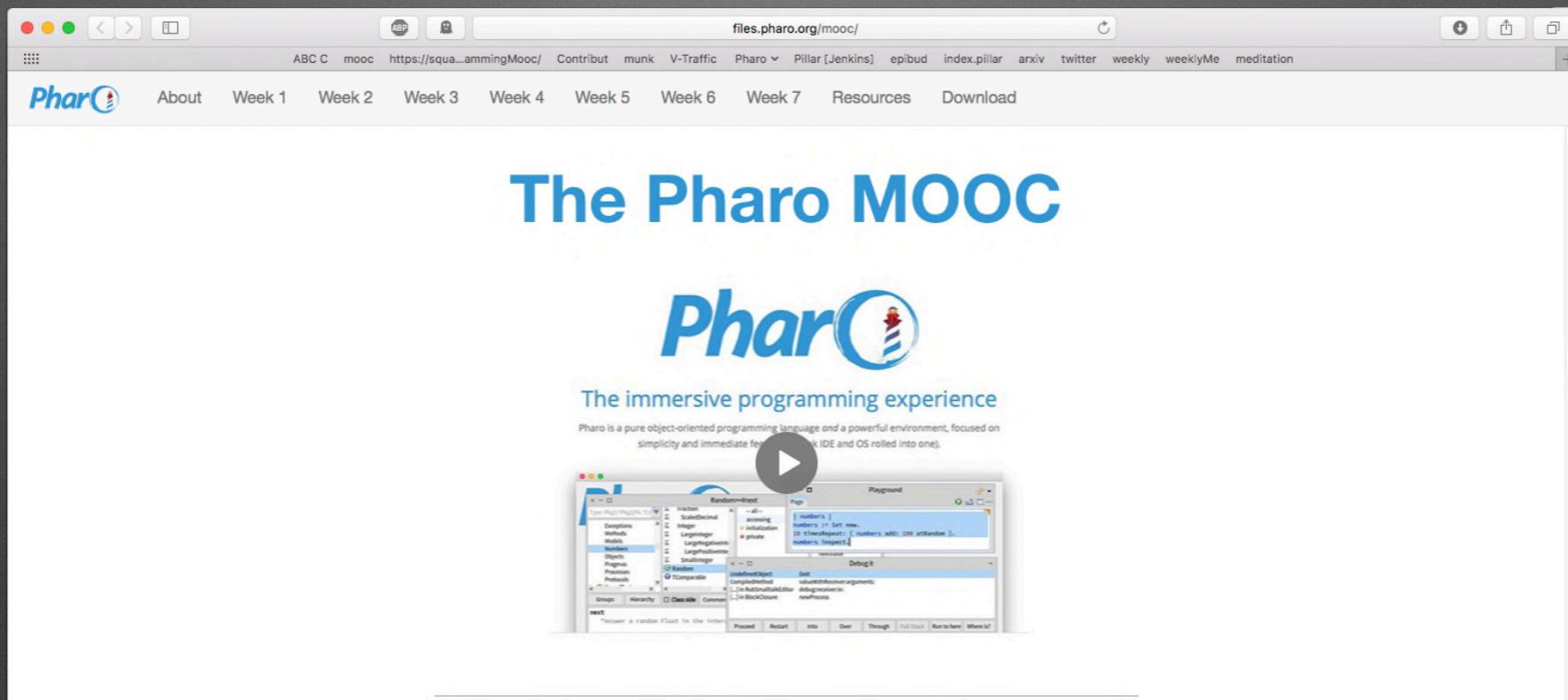
- Univ. of NoviSad • Uni. of Buenos Aires • Uni. of Bern • Uni. of Maroua • Uni. of Brussels • Ecole des Mines de Douai • Uni. de Savoie • Ivan Franko Nat. Uni. • Czech Technical Uni. • CULS Prague • Uni. of Quilmes • Uni. of La Plata • Northern Michigan Uni. • Uni. Technologica Nacional (UTN) • Uni. Catholic of Argentina • Uni. of Santiago • Uni. Policnica de Catalunya • Uni. de Bretagne Occidentale • Uni. of Tomsk • Uni. of Fernhagen • IT University of Copenhagen • Uni. of Yaounde • Uni. Lille • INFTI • Uni. of Lyon •

Some Research Groups

Lafhis (AR)
CAR (FR)
RMOD (FR)
Ummisco (IRD)
Reveal (CH)
Lysic (FR)
CEA-List (FR)
Uqbar (AR)
OC (FR)
CCMI-FIT (CZ)

ASERG (BR)
Pleiad (CL)
SoftQual(Serb)
SRA (Jap)
GL (Bol)
UFMG (Br)
ETS (Can)
U.Chi (Can)
Soft (Be)
...

<http://mooc.pharo.org>



The screenshot shows the homepage of the Pharo MOOC. At the top, there's a navigation bar with links for ABC C, mooc, https://squ...ammingMooc/, Contribut, munk, V-Traffic, Pharo, Pilar [Jenkins], epibud, index.pilar, arxiv, twitter, weekly, weeklyMe, and meditation. Below the navigation is a main title "The Pharo MOOC" in large blue letters. Underneath it is the Pharo logo, which consists of the word "Pharo" in blue lowercase letters next to a small icon of a lighthouse or a flame. Below the logo is the tagline "The immersive programming experience". A video player is embedded on the page, showing a screenshot of the Pharo IDE interface with code and a play button.

About this course

If you are either a beginner or an expert in object-oriented programming, this MOOC will change the way you program with objects: come and learn or rediscover object-oriented programming with Pharo!

Pharo is a pure object-oriented programming language in the tradition of Smalltalk. It offers a unique developing experience in constant interaction with live objects. Pharo is elegant, fun to use and very powerful. It is very easy to learn and enables to understand advanced concept in a natural way. When programming in Pharo, you are immersed in a world of live objects. You have immediate feedback at any moment of your development on objects representing web applications, code itself, graphics, network. [More...](#)

Obtaining the MOOC

We strongly suggest to follow the MOOC during the next session on France Université Numérique that will start **October 16th, 2017** because you will have support from the teaching team.

Join the discord channel mooc on the Pharo community (Invitation at <http://discord.gg/Sj2rhxn>)

But, you can also access all ressources of this MOOC offline on:

- [WebPortal](#): full online lecture with all videos and exercises,
- [CanalU](#): one of the key website that delivers ressources for teaching and research.

How to follow this MOOC?

We propose five profiles to follow this MOOC at different speed and levels. The Mooc sequences will be tagged according to these profiles. The profiles are not exclusive: to become a pharo expert you need to start as a newbie and grow up. Of course, you can also follow the full MOOC.

- **Total newbies [Newbies]** Focus on the beginning of the lectures, you can skip the Seaside/Mongo and tinyBlog exercises. Follow the end of the Mooc but without trying to understand everything. Take it easy and spend time understanding that the system is written in itself. Focus on the navigation tools (senders and implementors).
- **Looking for Web [Web]** For those that focus on web development, we suggest to get started with the syntax (since we really love this lecture you should really watch the not implementation

<http://discord.gg/Sj2rhxn>

The screenshot shows a dark-themed Discord interface. On the left is a sidebar with a tree view of channels under the category 'Pharo'. The main area is the '#mooc' channel, which has 23 new messages since 9:59 AM on November 23, 2017. The messages are as follows:

- 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)

On the right side, there are three sections of user lists:

- ADMIN—3**: Esteban Lorenzano, Juraj Kubeika, kilon
- CHANNEL-ADMIN—7**: Alexandre Bergel, Clement Bera, PhilBack, Stepharo, Torsten Bergmann ...
- ONLINE—42**: akgrant0710, AlejandroInfante, awarenghem, Benoit Verhaeghe, ...

<http://books.pharo.org>

Pharo Books

Pharo is a clean, innovative, open-source, live-programming environment.

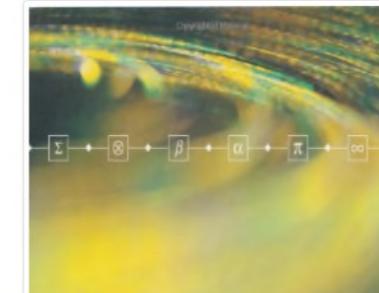
Contribute to the SquareBracketsAssociates community free books
<https://github.com/SquareBracketAssociates/>

Access [the book compilation farm!](#)



Pharo by Example, intended for both students and developers, will guide you gently through the Pharo language and environment by means of a series of examples and exercises.

[View details »](#)



Enterprise Pharo is the third volume of the series. This book covers libraries and frameworks for enterprises, and in particular those doing web development.

[View details »](#)



**https://
pharoweekly.wordpress.com**

The screenshot shows a Mac OS X desktop with a dark grey background. A web browser window is open, displaying the homepage of pharoweekly.wordpress.com. The page title is "WEEKLY NEWS ABOUT PHARO". Below the title is a subtitle: "Everything you wanted to know about <http://www.pharo.org> without being forced to read 1000 mails". The navigation bar includes links for "HITCHHIKER'S GUIDE TO ...", "SMALLTALK, TIPS'N TRICKS", "COG BLOG", and "ABOUT".

NOV 25 2017

[UNSORTED](#) [EDIT](#)

WHAT ABOUT CONTRIBUTING?

Here is the testimony of Astares regularly contributing to Pharo 70.
What is not visible in the list are the many enhancements happening also on Calypso, Bloc, Grease and many many others.
Nonetheless the core image still needs love from more people. Remember even the smallest change can make a difference and shape the future. Also "a contribution per day keeps bad systems away".
Even one contribution per week or month.
So jump in – the water is just fine!
Bye
T. (aka astares)

NOV 23 2017

[UNSORTED](#) [EDIT](#)

[PHARO 7.0A] NEXT ENHANCEMENTS 2

Report period: 5 November 2017 to 23 November 2017 Report period: 5 November 2017 to 23 November 2017

- * 20739-Remove-dead-stream-primitives >> <https://pharo.fogbugz.com/f/cases/20739/Remove-dead-stream-primitives>

Issue URL: <https://pharo.fogbugz.com/f/cases/20739> PR URL: <https://github.com/pharo-project/pharo/pull/524> Diff URL: <https://github.com/pharo-project/pharo/pull/524/files>

Thanks to clementbera

- * 20645-Windows-rebuildFieldAccessors-problem >> Fixing the creation of anonymous classes



**Pharo is our vehicle
We improve it
everyday**

**For us Pharo is the
beginning of the journey and
we are building the road**

**Pharo is
research friendly**

We are ready
to help you
validate
your ideas

We can be
guinea pigs

Actively supporting research

The screenshot shows the Pharo IDE interface. On the left, a search dialog titled "Search" is open, showing results for "#Menu 15/62". The results list includes "System Browser", "Playground", "Test Runner", "Spotter", "Iceberg", and "Monticello Browser". A message at the bottom of this dialog encourages users to send diagnostic and usage data to help improve Pharo.

On the right, the "NumberParser" class is selected in the "NumberParser" class browser. The browser displays the class definition:

```
Object subclass: #NumberParser
instanceVariableNames: 'sourceStream base neg integerPart fraction
nDigits lastNonZero requestor failBlock'
classVariableNames: ''
package: 'AST-Core-Parser'
```

The "NumberParser" class is highlighted in blue. The browser also shows a history navigator with various categories: "all", "accessing", "error", "initialize-release", "parsing-large int", "parsing-private", and "parsing-public".

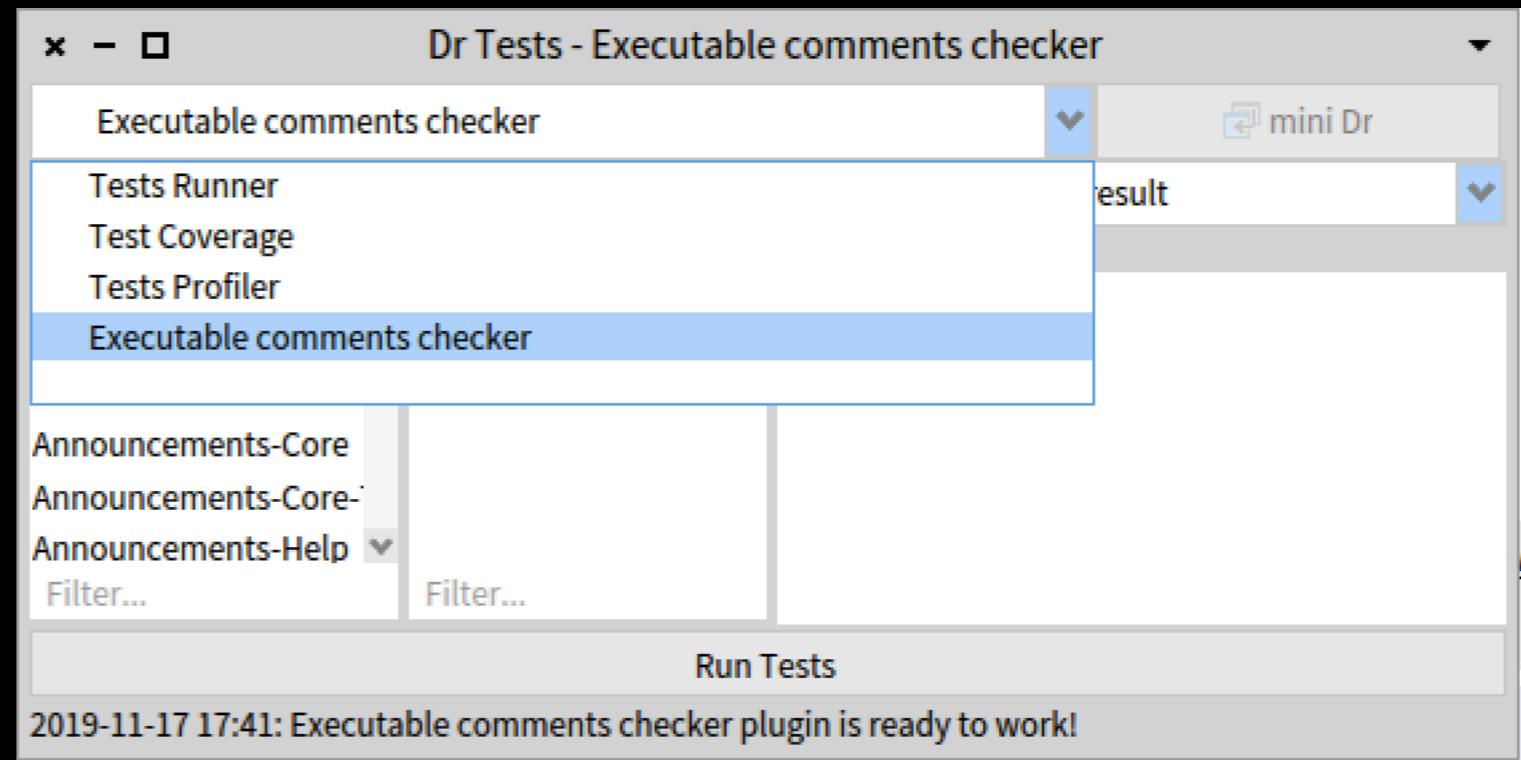
At the bottom of the screen, there is a toolbar with icons for "Utility methods", "Helpful?", and "Format as you read".

SCG (Uni. Bern)

Best Paper Award @ ICPC'19

**Kubelka, Bergel, Robbes,
“Live Programming and Software Evolution:
Questions during a Programming Change Task”**

DrTests: a plugin-based architecture to plug test analyses...



We validated our 25000
tests for Rotten Green
Tests (ICSE'19)

Test Amplification

by S. Demeyer, H. Rocha, M. Abdi

Code Review

by A. Bachelli, ObjectProfile

Join us

- Have fun with us.
- There are plenty of opportunities