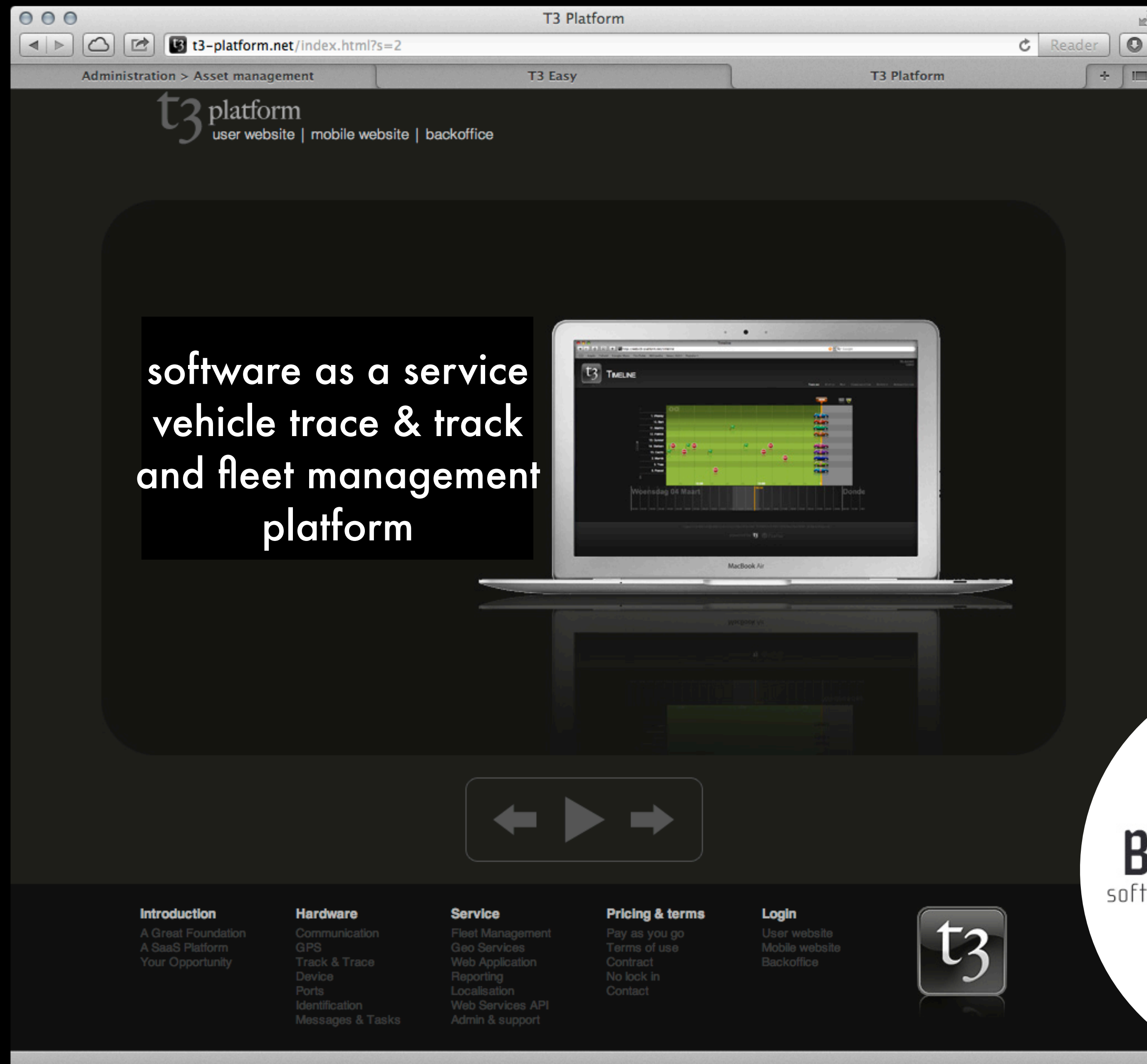




HTTP Fundamentals

Sven Van Caekenberghe

<http://stfx.eu>



Administration > Asset management

web.t3-platform.net/asset-management

Reader

Administration > Asset management

T3 Easy

My account (SMS Credits: 50)
[Support](#)
[Logout](#)

t3

ADMINISTRATION

ASSET MANAGEMENT

TIMELINE

STATUS

MAP

COMMUNICATION

REPORTS

ADMINISTRATION

EVENTS

[« Back](#)

OBD Dongle Sven

Name	OBD Dongle Sven	
Icon		
Color		
Tracker	Distance	
Fuel type	Diesel	
CO2 emission / L	2.64 kg/L	
Avg fuel consumption driving	6	L/100km
Avg fuel consumption idling	0.84	L/hour
Average CO2 emission	120	g/km
Energy rating*:	C A B C D E F G	

*estimated value

standard CO2 emission scores

Save

Cancel

Device details

Type	c4obd2		
Internal ID	logical 7636 - physical 7634		
Identification	351777046654354		
Serial number	9000111354		

Logged in as Beta Nine Fleet User for account Beta Nine Fleet. T3 Platform © 2007-2013 Beta Nine BVBA. All Rights Reserved.

powered by

t3

Firefox

Status

web.t3-platform.net/statusReader

StatusT3 EasyT3 Platform

t3STATUS

My account (SMS Credits: 50)
Support
Logout

TIMELINESTATUSMAPCOMMUNICATIONREPORTSADMINISTRATIONEVENTS

Active d...

C4D 2.4.3 50001034646

C4D CAN 1

C4Evo 350

21.8 °C Laurierstraat 4 - Hasselt (BE) since 3/05/13 2:08 (15 h 10 min).

C4OBD Easy One

HEIN@HOME since 4/06/13 12:23 (21 h 21 min)

dongle Audi A3
Sven Volders

HOME SVEN since 4/06/13 17:58 (15 h 45 min)

OBD 1-BOZ-195
Benny Bangels

EG since 8:43 (1 h)

OBD Behave

ce 4/06/13 17:58 (15 h 45 min)

OBD Dongle Don

departed HOME DONALD on 13/03/13 7:56 (24 sec).

OBD Dongle Hein

25/03/13 7:55 (4 h 8 min).

OBD Dongle Ron

OBD Dongle Sver

nce 8:48 (55 min)

OBD Dongle Wou

Sercam Solid

nce 7/03/13 9:03 (455 h 59 min).

Simulator

Sluisstraat 6 - Nieuw Veld, Hasselt (BE) since 23/05/13 11:24 (10 sec).

C4OBD Easy One

Time9:44

Mileage2.795 km

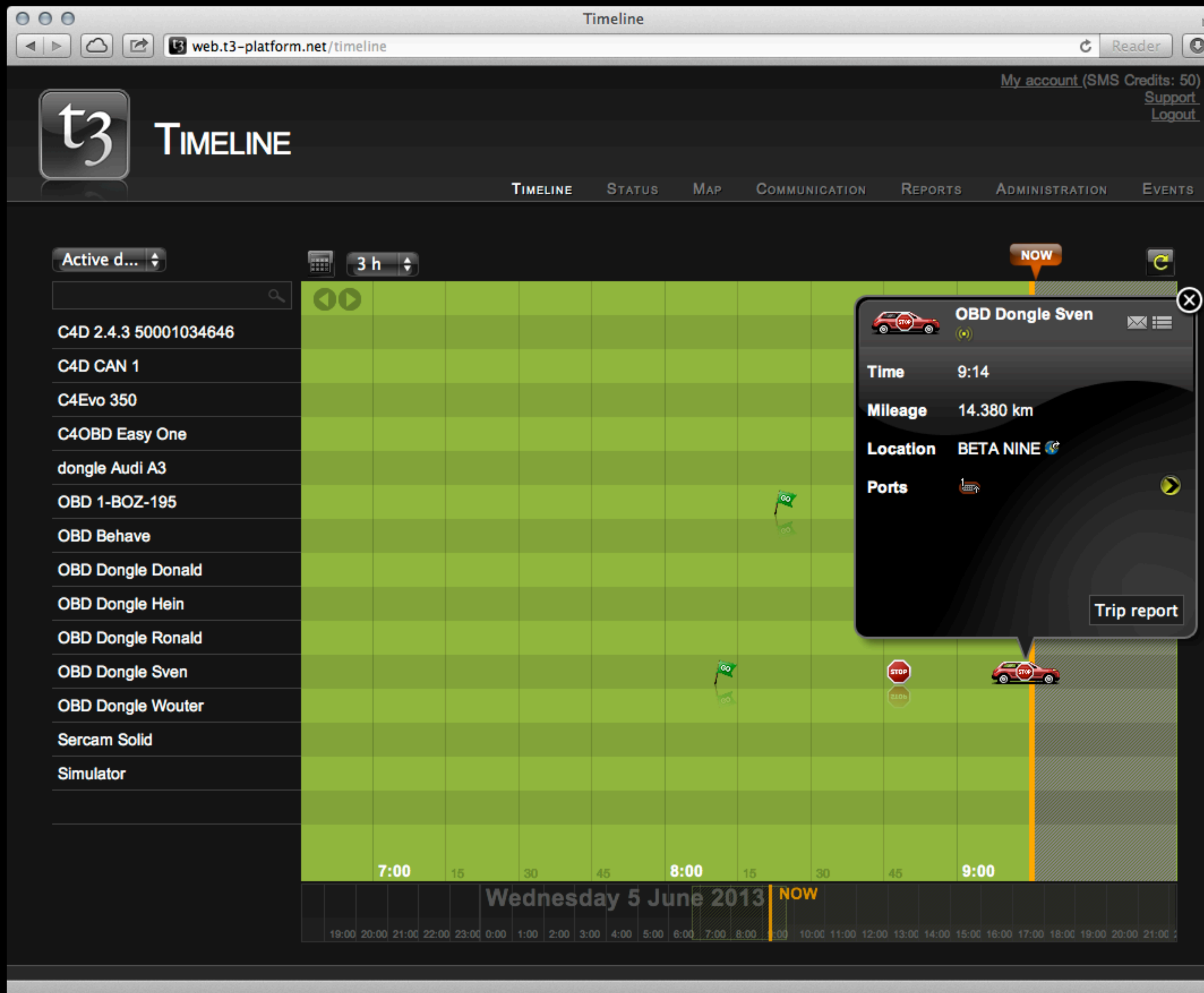
LocationHEIN@HOME

Trip report

Wednesday 5 June 2013

NOW

20:00 21:00 22:00 23:00 0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00 10:00 11:00 12:00 13:00 14:00 15:00 16:00 17:00 18:00 19:00 20:00 21:00



Reports > Trip Report

web.t3-platform.net/simple-reports/trip?id=/logical-devices/7636&day=20130605T091810

Reader

Reports > Trip Report

T3 Easy

t3

REPORTS

TRIP REPORT

My account (SMS Credits: 50)

Support

Logout

TIMELINE

STATUS

MAP

COMMUNICATION

REPORTS

ADMINISTRATION

EVENTS

Active d...

Asset

OBD Dongle Sven

3-May-2013

1

day(s)

Trips

Drives

Stops

Vehicle Distance: 11.268 km

2/05/13

18:02

HOME SVEN

13 h 44 min

7:47

3/05/13

7:47

131,1 km in 1 h 21 min

Obourg, Mons (BE)

9:08

9:08

Obourg, Mons (BE)

5 min

9:14

9:14

78,5 km in 39 min

Haute-Borne, Villeneuve-d'Ascq (FR)

9:53

9:53

Haute-Borne, Villeneuve-d'Ascq (FR)

8 h 38 min

18:32

18:32

207,0 km in 2 h 7 min

HOME SVEN

20:39

20:39

HOME SVEN

44 min

21:23

21:23

9,9 km in 22 min

HOME SVEN

21:45

21:45

HOME SVEN

12 h 28 min

10:14

Distance: 426,7 km

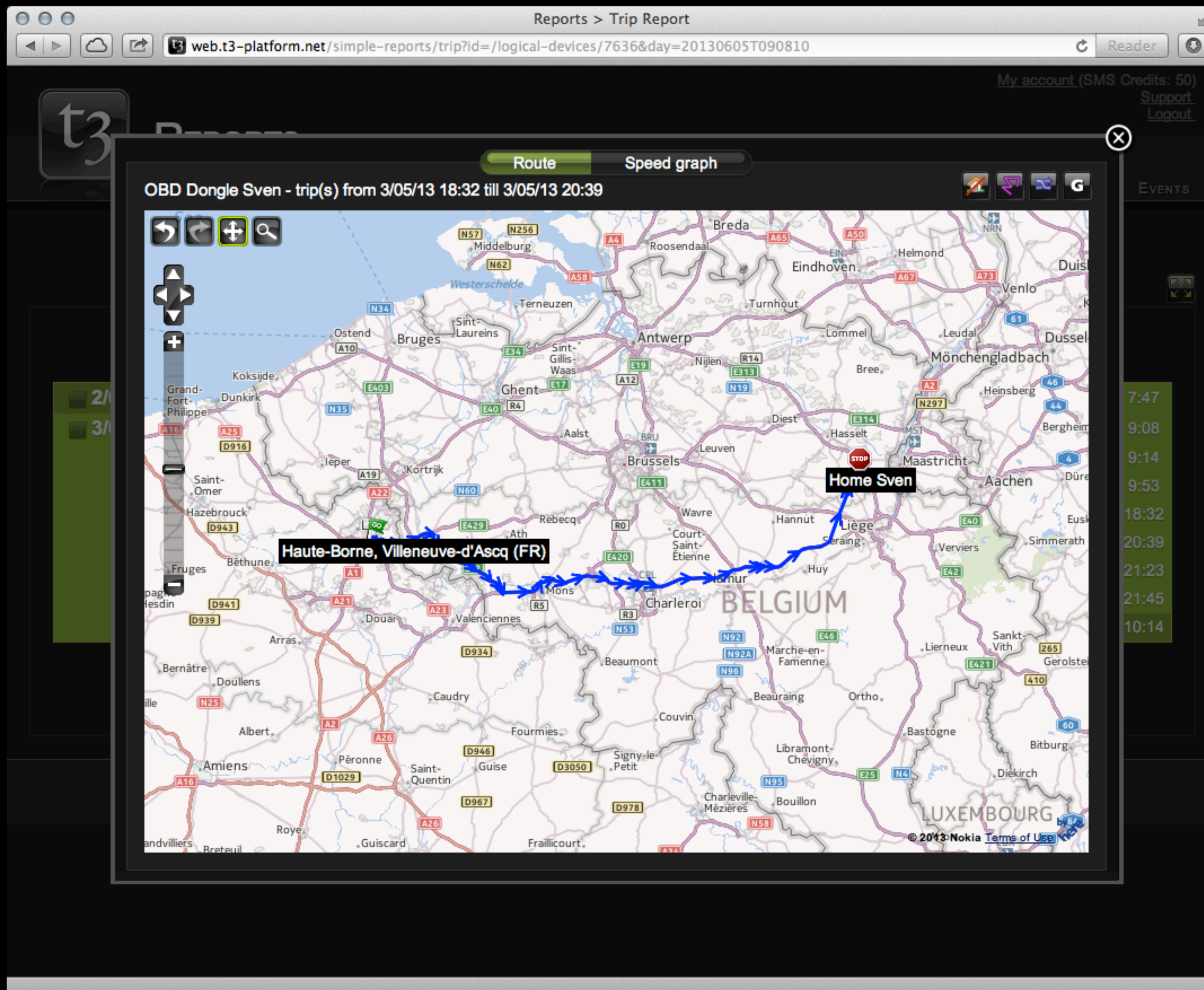
Vehicle Distance: 11.695 km

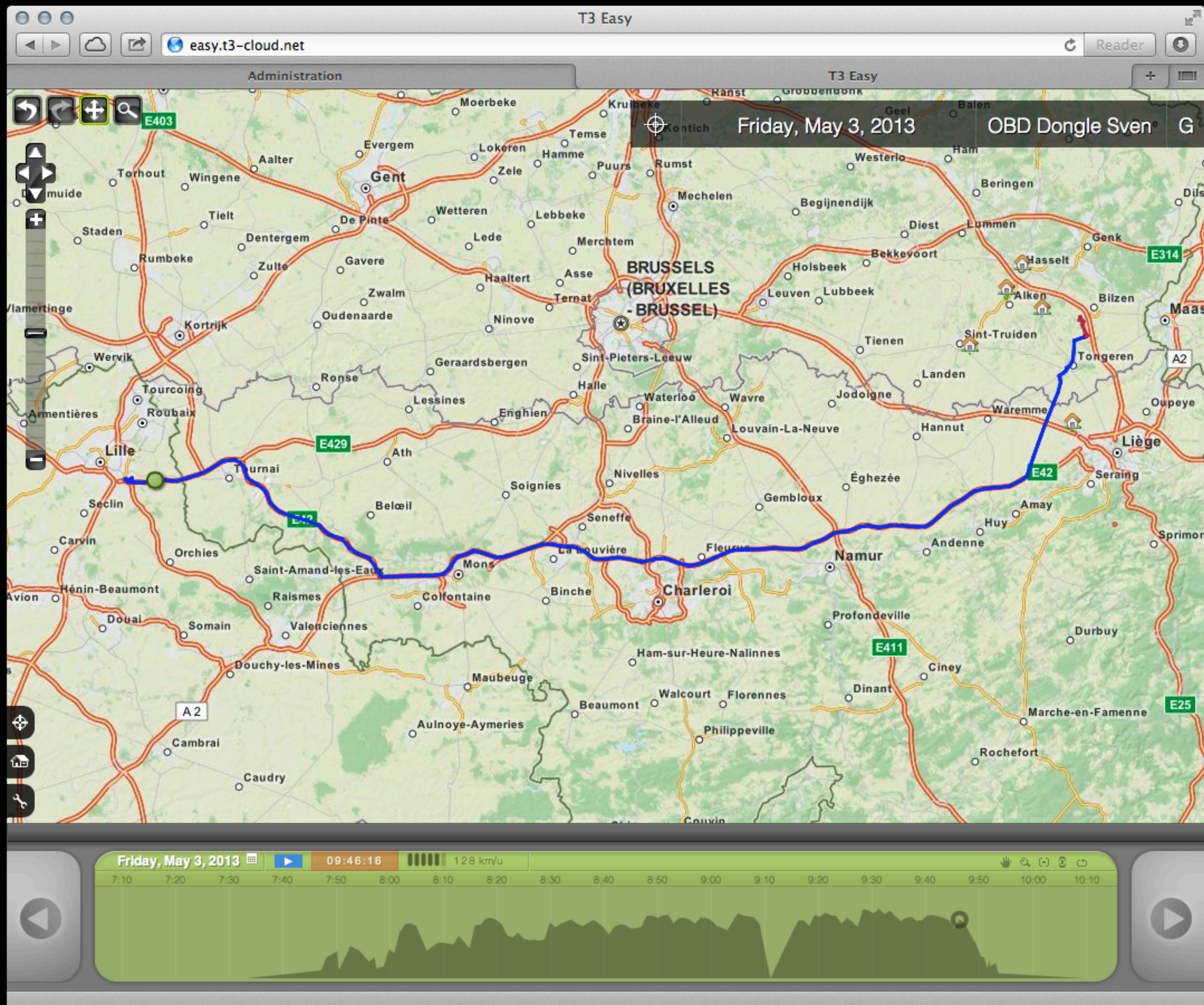
Logged in as Beta Nine Fleet User for account Beta Nine Fleet. T3 Platform © 2007-2013 Beta Nine BVBA. All Rights Reserved.

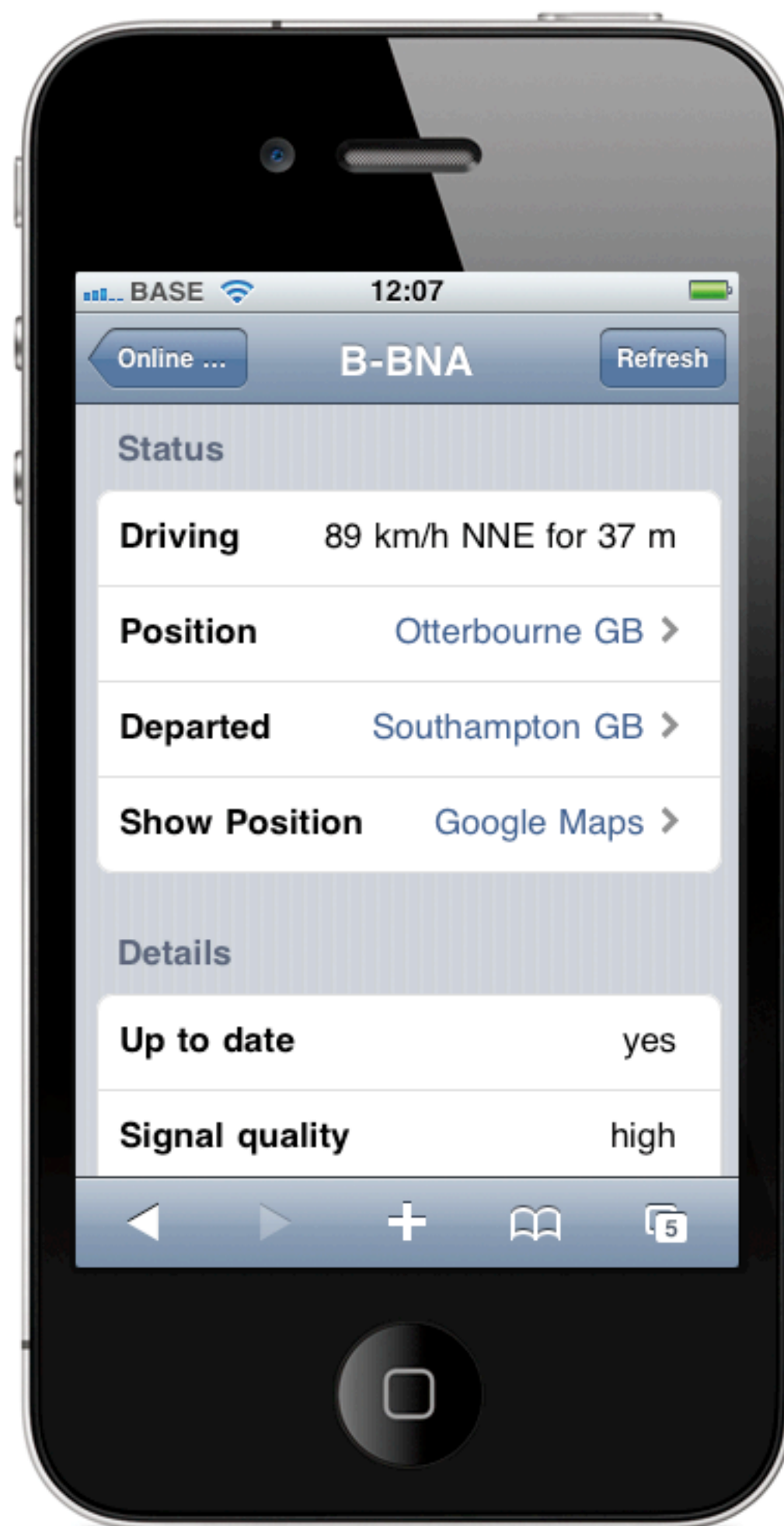
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t3

Firefox









- [Zinc HTTP Components](#)
- [Zodiac TLS/SSL Streams](#)
- [Zinc WebSockets](#)
- [Smalltalk Object Notation Reader/Writer](#)
- [JSON Reader/Writer](#)
- [CSV Reader/Writer](#)
- [ZTimestamp \(efficient, second precision, UTC\)](#)
- [Zinc SSO \(OAuth1, OAuth2 and OpenID\)](#)
- [Shared Smalltalk Workspaces](#)
- [A Monticello Repository backed by Amazon AWS](#)
- [Deploy a Smalltalk HTTP Server with 1 command](#)

```
$@ join: #( 'sven' 'stfx.eu')
```

Copyright © 2011,2012.2013 Sven Van Caekenberghe. All Rights Reserved. A [Wolf 359](#) operation.



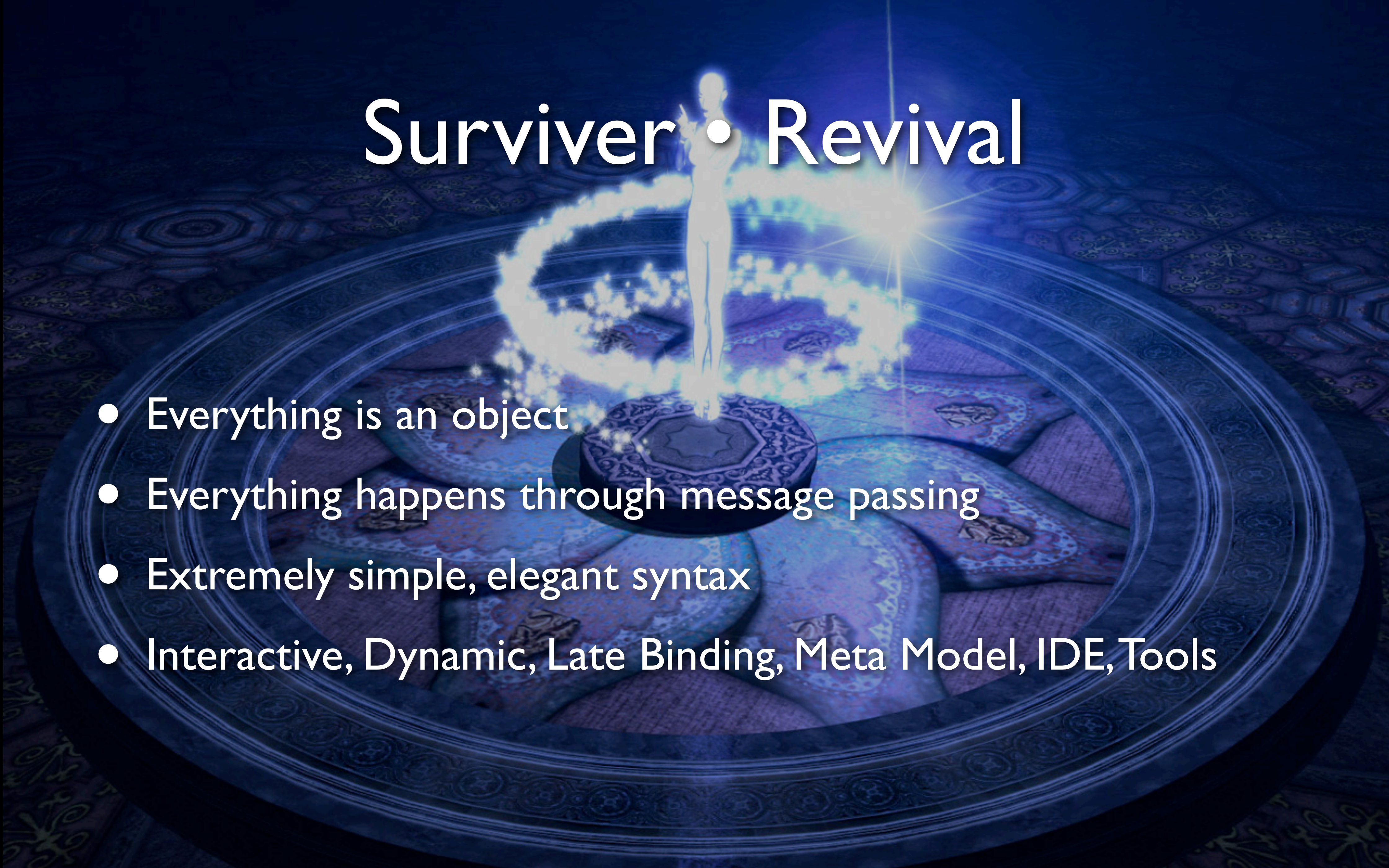
HTTP Fundamentals

Too Old ?

- 1983 - 30 years ago - Smalltalk-80 v2
- 1990 - World Wide Web
- Networking ?
- HTTP ?



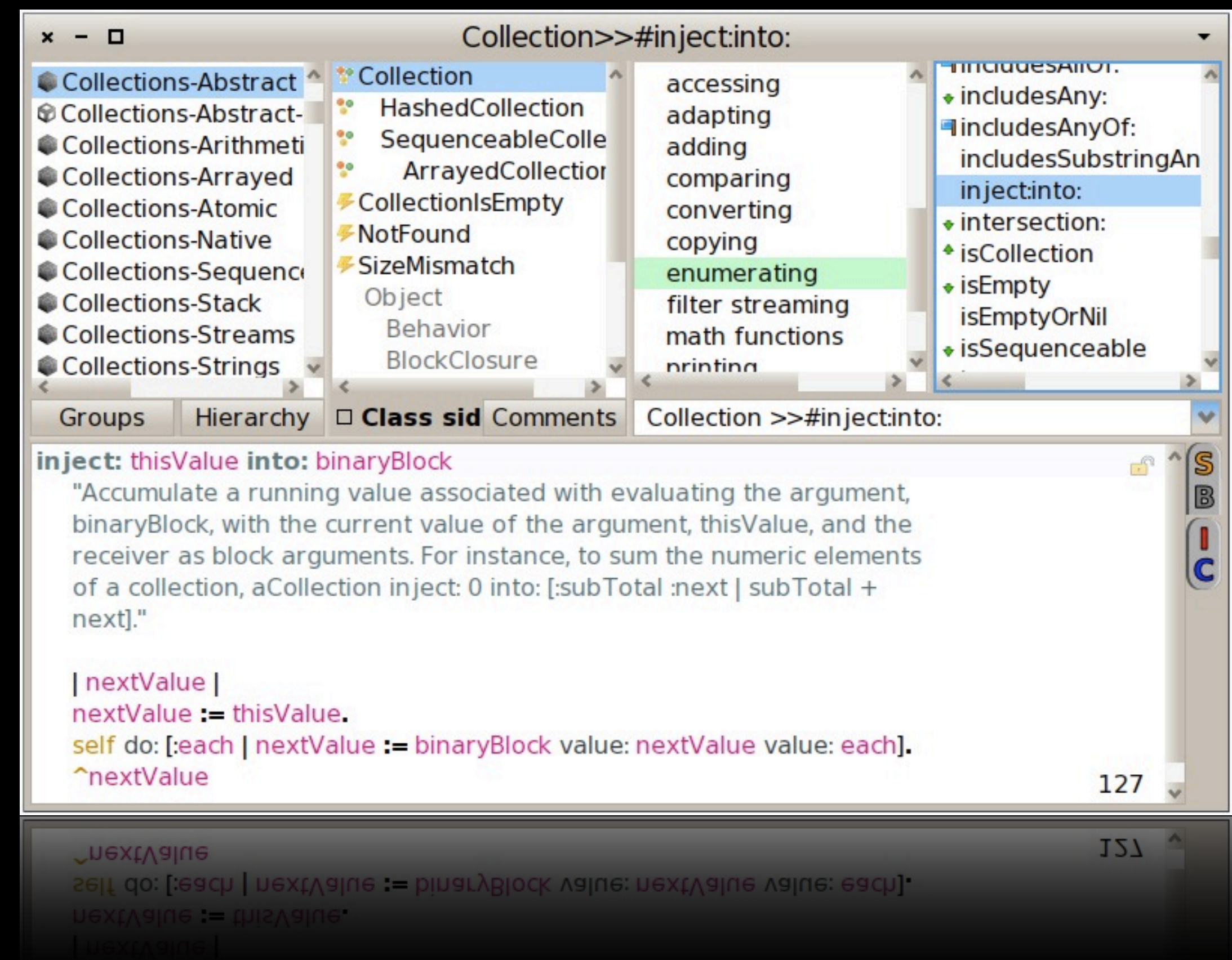
Surviver • Revival

A glowing, ethereal figure stands on a circular platform with a bright light behind it, set against a dark blue background with a circular pattern. The figure is surrounded by a bright, glowing aura. The background features a large, circular, ornate pattern that resembles a mandala or a complex geometric design.

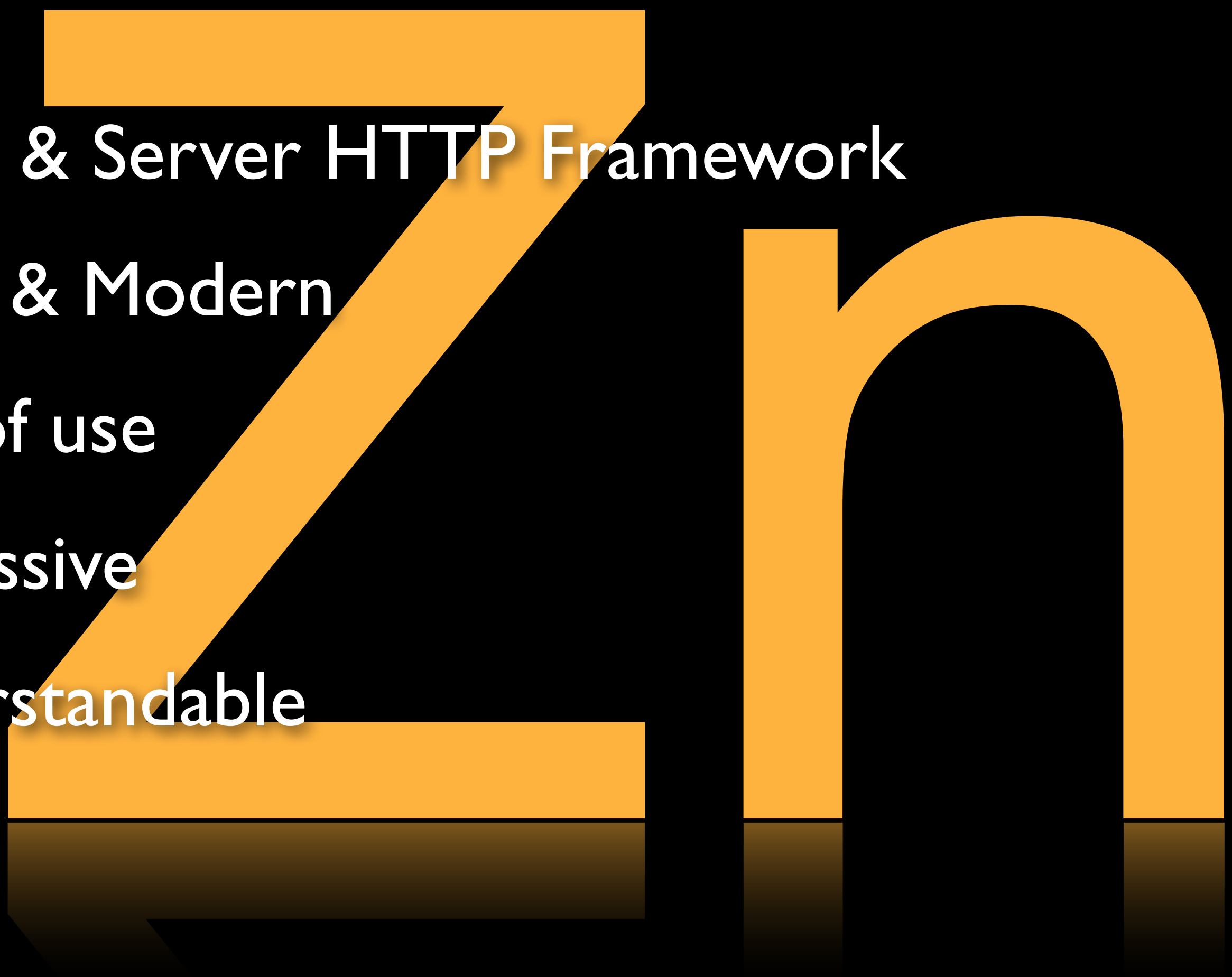
- Everything is an object
- Everything happens through message passing
- Extremely simple, elegant syntax
- Interactive, Dynamic, Late Binding, Meta Model, IDE, Tools



- 21st Century Smalltalk
- Cleanups & Refactorings
- New Libraries
- Fundamental Changes



Zinc HTTP Components

- 
- Client & Server HTTP Framework
 - Clean & Modern
 - Easy of use
 - Expressive
 - Understandable

ZnMessage

ZnRequest

ZnResponse

ZnRequestLine

ZnStatusLine

ZnHeaders

ZnEntity

ZnStringEntity

ZnByteArrayEntity

ZnStreamingEntity

ZnMimeType

ZnUrl

Client Side

ZnClient new

get: '<https://www.google.com?q=Pharo>'.



ZnClient new

https;

host: 'www.google.com';

queryAt: 'q' put: 'Pharo Smalltalk';

get;

response.



ZnClient new
systemPolicy;
url: '<http://easy.t3-platform.net/rest/geo-ip>';
queryAt: 'address' put: '81.83.7.35';
accept: **ZnMimeType** applicationJson;
contentReader: [:entity |
 NeoJSONReader fromString: entity contents];
ifFail: [^ self inform: 'Sorry, Dave, no can do.'];
get.



- Request Builder & Response Access
- Connection Reuse & Cookie Management
- Redirects & Retries
- Streaming Downloads & Uploads
- Compression, Chunking, Authentication
- Request Signing & ...

Server Side

(ZnServer defaultOn: 1701)
start.



(**ZnServer** defaultOn: 1701)
onRequestRespond: [:request |
| msg |
msg := request uri queryAt: 'msg' ifAbsent: ['nothing'].
ZnResponse ok: (**ZnEntity** text: 'Hi, you said: ', msg)];
start.



(**ZnServer** defaultOn: 1701)
logToTranscript;
useGzipCompressionAndChunking;
onRequestRespond: [:request |
| msg |
msg := request uri queryAt: 'msg' ifAbsent: ['nothing'].
ZnResponse ok: (**ZnEntity** text: 'Hi, you said: ', msg)];
authenticator: (**ZnBasicAuthenticator**
username: 'admin' password: 'secret');
start.



- Core HTTP Protocol Logic
- Pluggable Request/Response Handling
- Pluggable Authentication
- Session Management
- Encoding, Compression, Chunking
- Logging, Debugging, Resource Protection, ...

Client + Server



```
| server client |
server := ZnServer on: 1701.
server
  onRequestRespond: [ :request |
    | msg |
    msg := request uri queryAt: 'msg' ifAbsent: [ 'nothing' ].
    ZnResponse ok: (ZnEntity text: 'Hi, you said: ', msg) ];
  start.
client := ZnClient new beOneShot.
client
  url: server localUrl;
  queryAt: 'msg' put: 'ABC';
  get.
self assert: (client response contents endsWith: 'ABC').
```


Zodiac TLS/SSL Streams

- 
- Clean Binary SocketStreams
 - Efficient IO Buffer Management
 - Native OS Level SSL Plugin
 - Encrypt / Decrypt
 - Client Connect / Server Accept

Zinc WebSockets

- 
- Client & Server WebSockets Framework
 - Easy of use
 - Expressive
 - Understandable

Client Side

| websocket |
websocket := **ZnWebSocket** to: 'ws://echo.websocket.org'.
[websocket
 sendMessage: 'Pharo using Zinc WebSockets !';
 readMessage] ensure: [websocket close].



Server Side

ZnWebSocket

startServerOn: 8080

do: [:websocket |
[

 websocket runWith: [:message |
 self crLog: 'Echoing: ', message printString.
 websocket sendMessage: message]]

on: **ConnectionClosed**

do: [self crLog: 'Ignoring connection close, done']].



ZnWebSocket

startServerOn: 8080

do: [:websocket |

[

websocket runWith: [:message |

websocket sendMessage: message]]

on: **ConnectionClosed**

do: []].



Zinc SSO

- 
- Authentication/Authorization Framework
 - Client side 'Single Sign On' implementations
 - OAuth 1 & 2
 - OpenID

Log In With

Google™

facebook.



Microsoft

YAHOO!

Dropbox

myOpenID™

Hyves

and in principle many others

Zn & Seaside Demos
Web App, Web Service, Code

Zinc AWS S3

- Amazon Web Services (AWS) Simple Storage System (S3) Client
- Easy with ZnClient + XML Support
- Request Signing
- Integrity Checks
- Upload/Download Streaming


```
| client |  
(client := ZnAWSS3Client new)  
  accessKeyId: '2ZGSSBG...J9VV5N441';  
  secretAccessKey: 'OtxxIsfpFjXzIL...uhboDYROV';  
  checkIntegrity: true.  
client buckets.  
client keysIn: 'my-bucket'.  
client at: 'my-bucket' -> 'my-key'.  
client at: 'my-bucket' -> 'my-key' put: (ZnEntity with: 'ABCDEF').  
client remove: 'my-bucket' -> 'my-key'.  
client removeBucket: 'my-bucket'.
```



Pharo Ecosystem



Formats

- XML (DOM & SAX Parsers + Writer)
- JSON (Generic + Mapped), BSON
- CSV (Delimiter Separated Records)
- Fuel (Binary Serialization)
- STON (Textual Serialization)
- ...

Clients

- Memcached (Shared Memory Cache)
- PostgreSQL & MySQL (Relational DB)
- Mongo & Riak (Non-SQL DB)
- XML-RPC
- STOMP (Message Queues)
- ...

Community

- Mailing Lists
- Cool, International, Friendly & Intelligent ;-)
- Sprints & Conferences
- Pharo Association
- Pharo Consortium
- ...

May the source be with you !

Open Source
Browse
Readable Source Code
Senders & Implementors

In Production

VM + Image

- Virtual Machine (Cog x86 JIT)
- Memory Image (Object World)
- Efficient (10~20 Mb, typically 50~100 Mb)
- Single Core + Green Threads + 32 bit
- Practical 1~1.5 Gb Heap Limit

Standard Architecture

- Load Balance to Scale Horizontally
 - Stateless
 - Session Affinity (Sticky Sessions)
- Off Load Static Resources
- Intelligent Caching
- Monitor with fast failover

Command Line

Fully Supported


```
sven — bash
$ curl get.pharo.org/30+vm | bash
% Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
           %             Dload  Upload  Total   Spent    Left   Speed
100 2708 100 2708    0     0 41140      0 --:--:-- --:--:-- --:--:-- 75222
Downloading the latest 30 Image:
  http://files.pharo.org/image/30/latest.zip
Pharo.image
Downloading the latest pharoVM:
  http://files.pharo.org/vm/pharo/linux/pharo-linux-stable.zip
pharo-vm/pharo
Downloading PharoV10.sources:
  http://files.pharo.org/sources//PharoV10.sources.zip
Downloading PharoV20.sources:
  http://files.pharo.org/sources//PharoV20.sources.zip
Creating starter scripts pharo and pharo-ui
$ ./pharo Pharo.image printVersion
[version] 3.0 #30180
$ ./pharo Pharo.image eval '42 factorial'
1405006117752879898543142606244511569936384000000000
$ ./pharo Pharo.image eval --no-quit 'ZnServer startDefaultOn: 1701' &
[1] 28507
a ZnManagingMultiThreadedServer(running 1701)
$ curl http://localhost:1701/
...
```




And there is more...

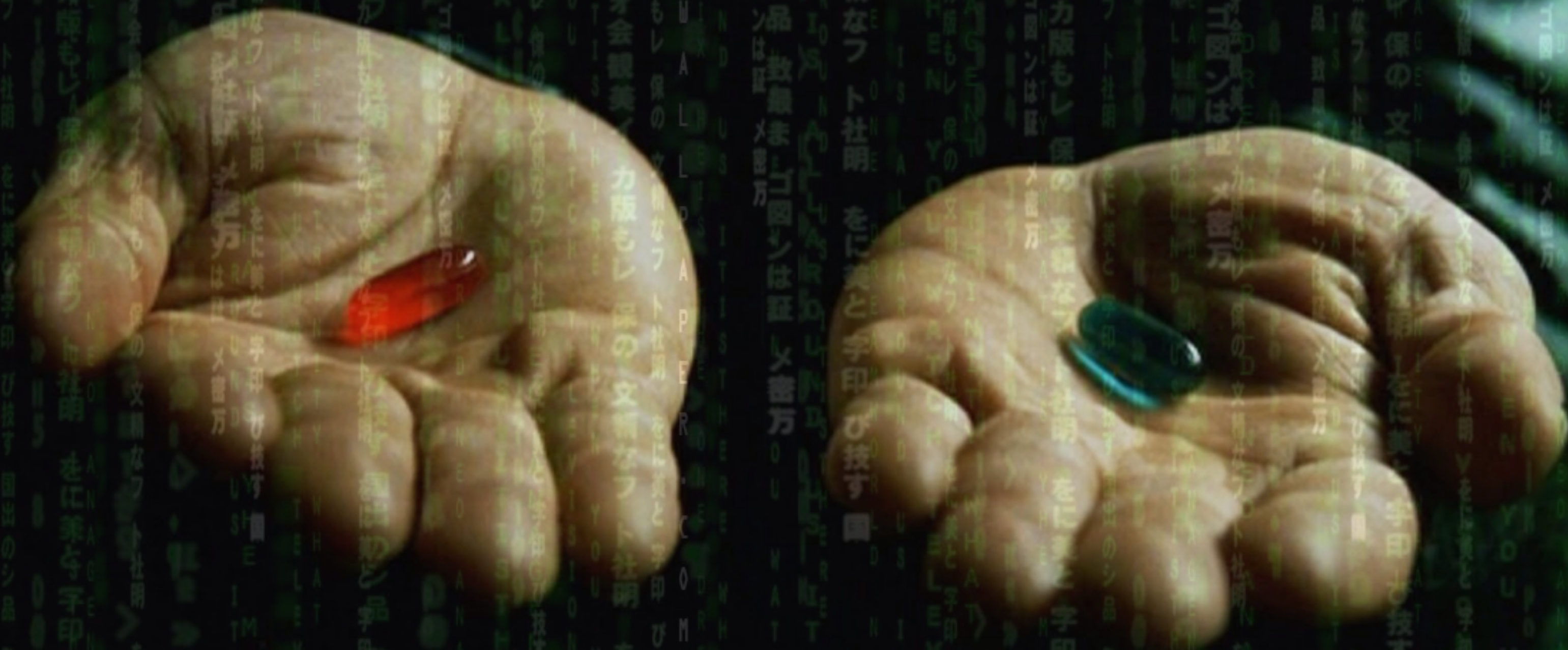
Way more ;-)



Please come and join us !

<http://www.pharo.st>

Warning



Smalltalk is the Red Pill



HTTP Fundamentals

Sven Van Caekenberghe

<http://stfx.eu>