



ITRACT

Improving Transport and
Accessibility through new
Communication Technologies

WP4

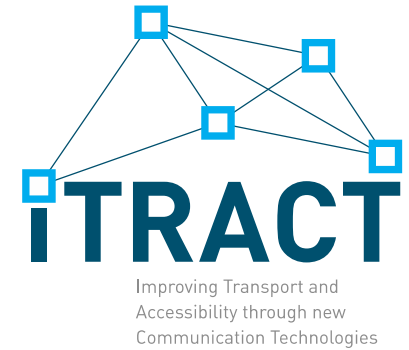
Skipton, Wednesday 5 June 2013

Jacob Mulder, WP4 leader, J.Mulder@pl.Hanze.nl

Version 3/6/2013

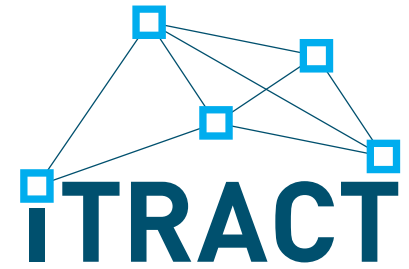
Agenda

- Introduction
- Status
- Building Blocks
- Live demo
- Future

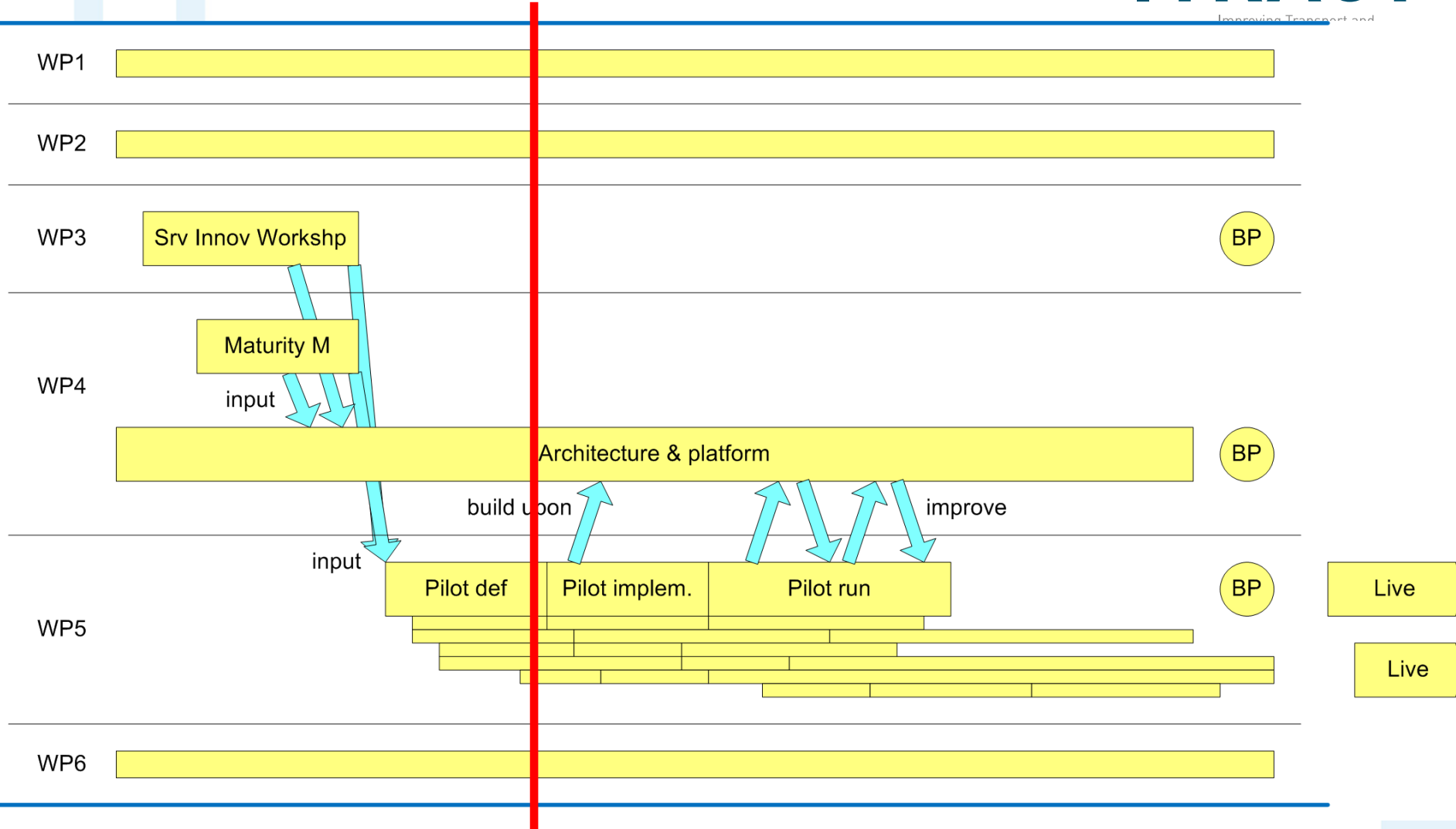


**(36 slides in 20 minutes
+ demo of 10 minutes)**

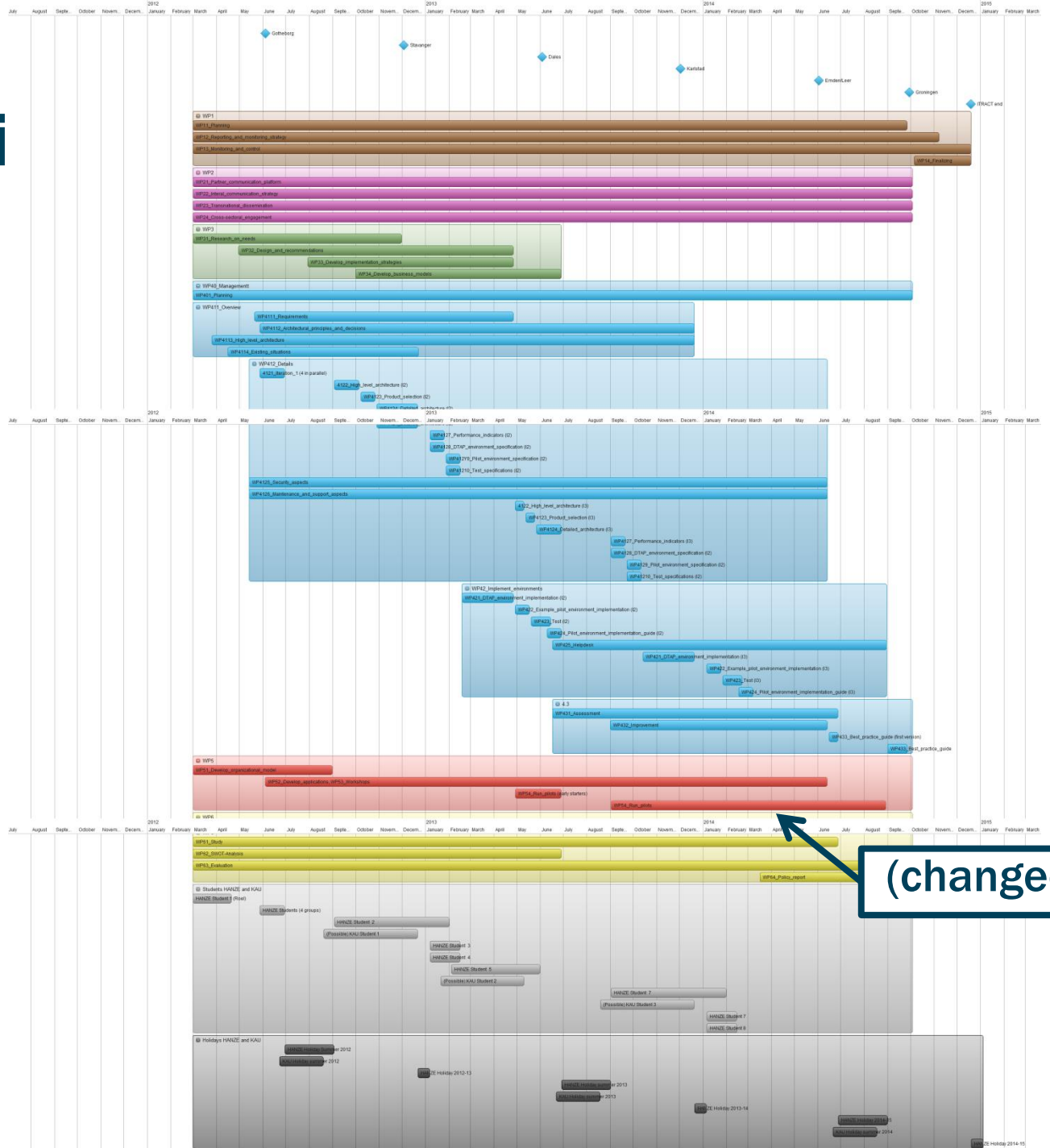
Introduction



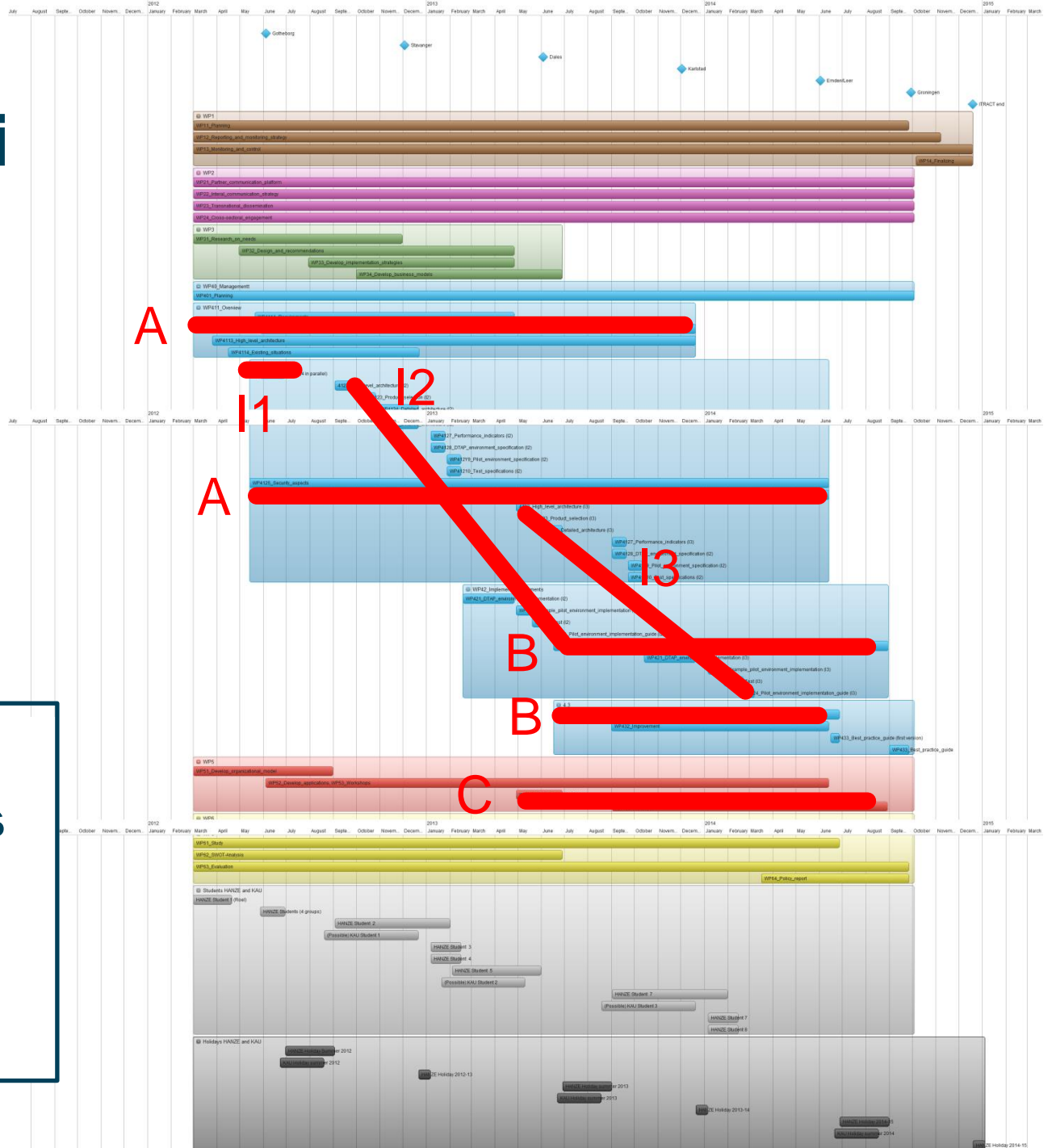
Improving Transport and



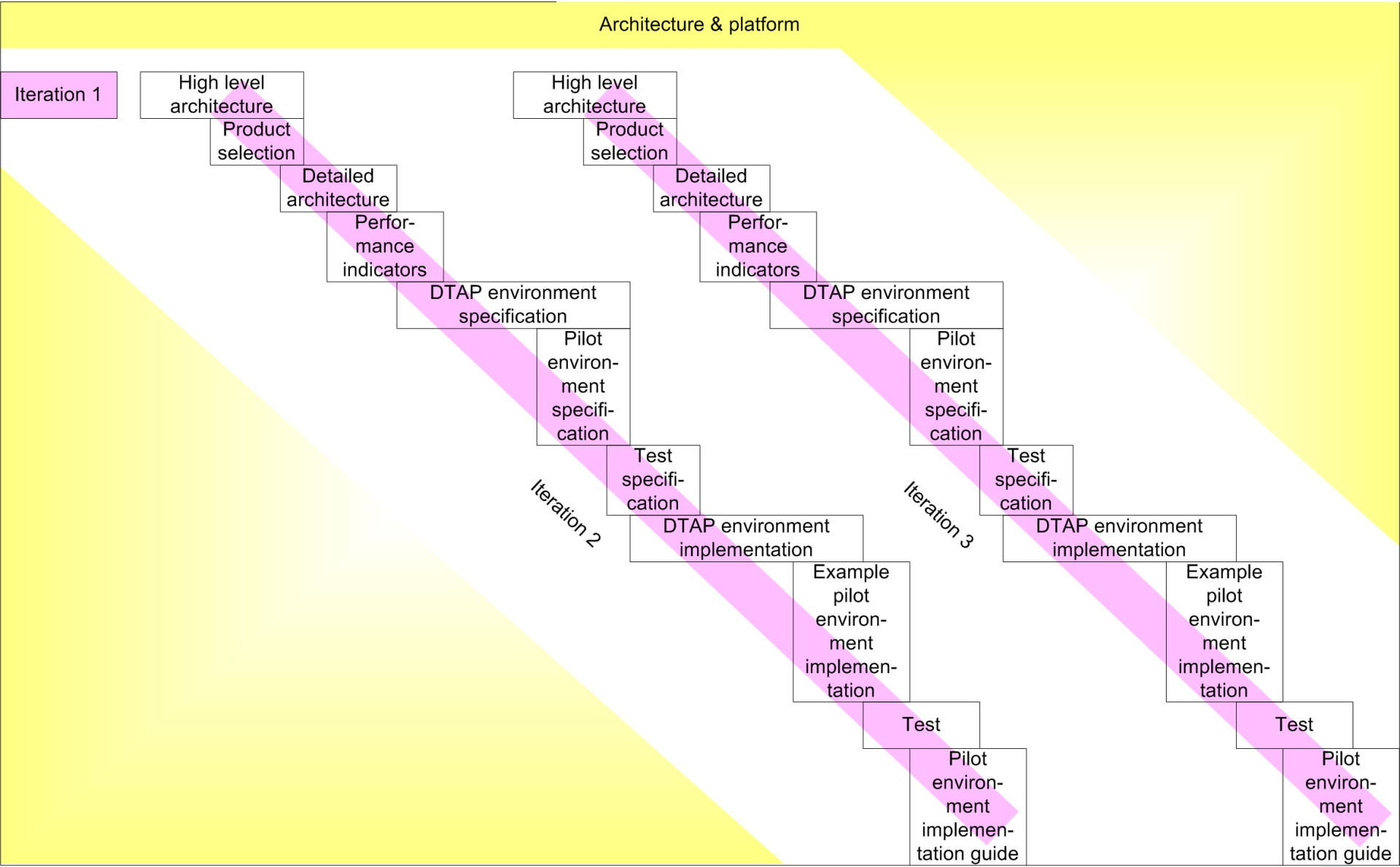
Introducti



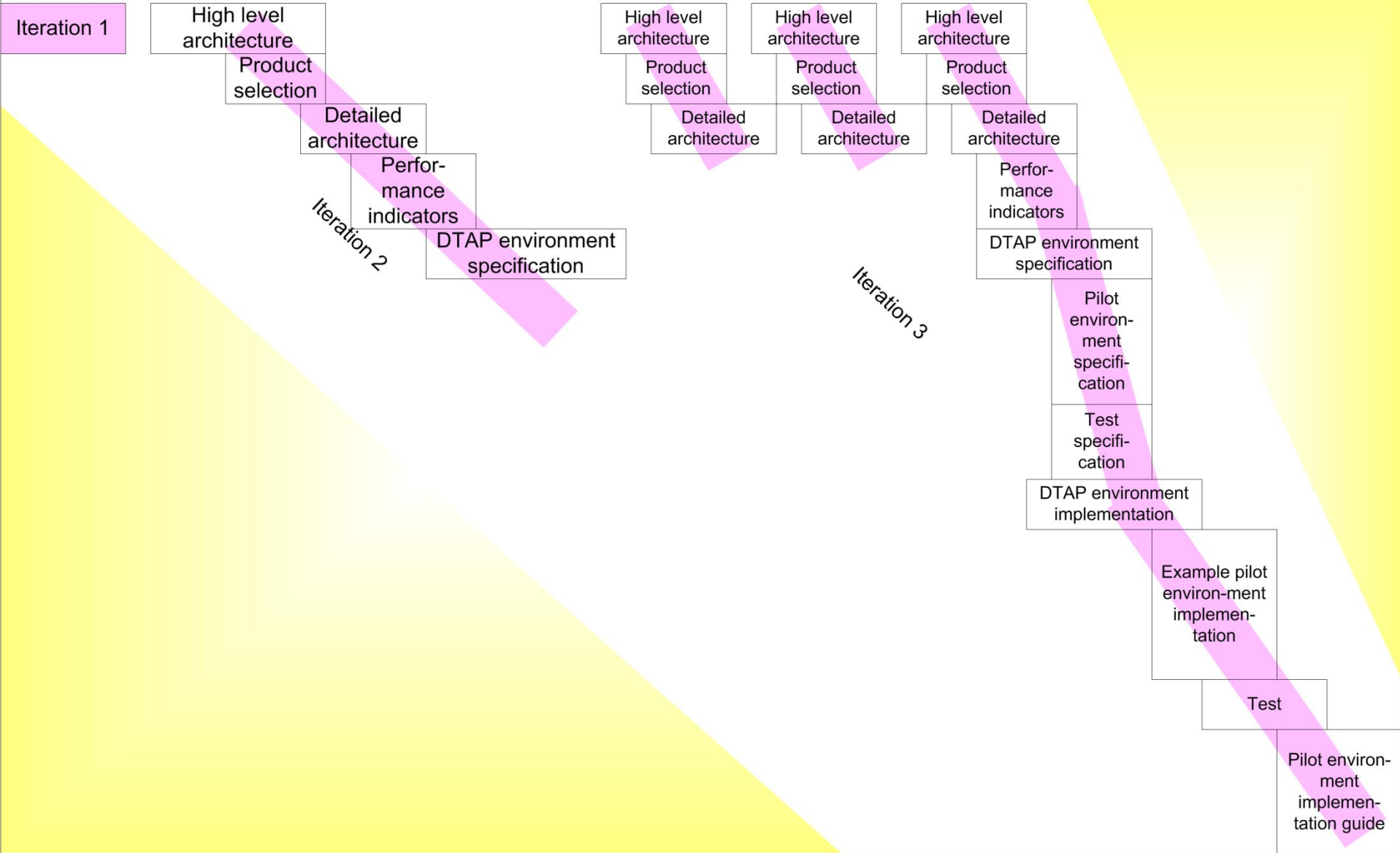
Introducti



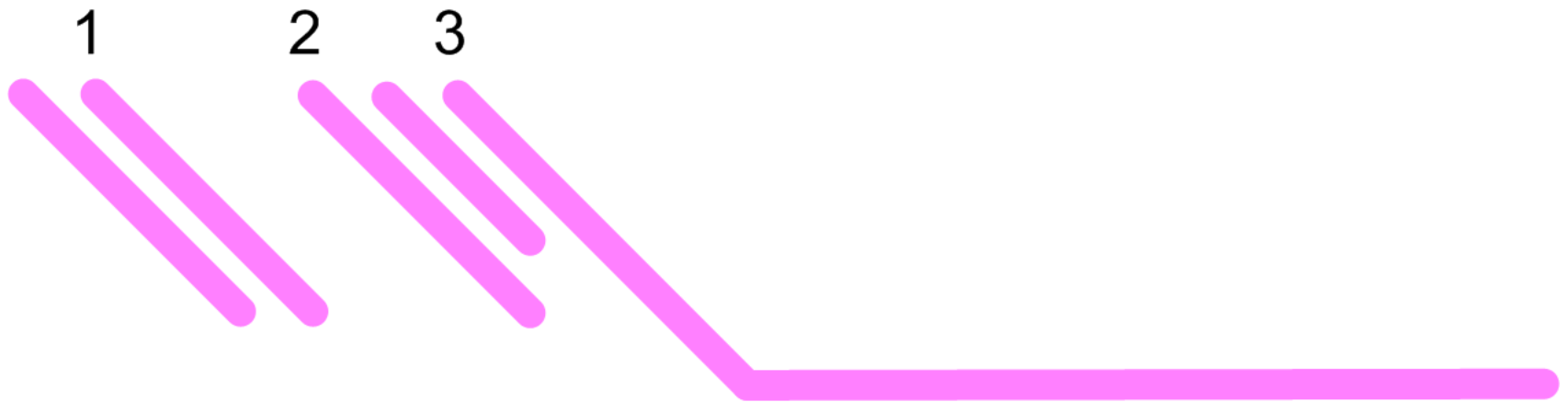
- I1 + I2 + I3 = Iterations
- A + B + C = Ongoing activities



Architecture & platform



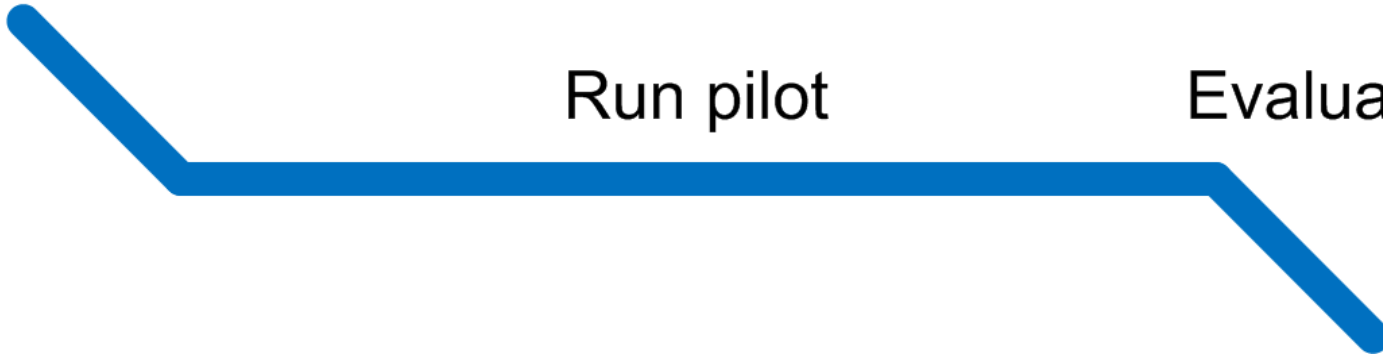
Iterations

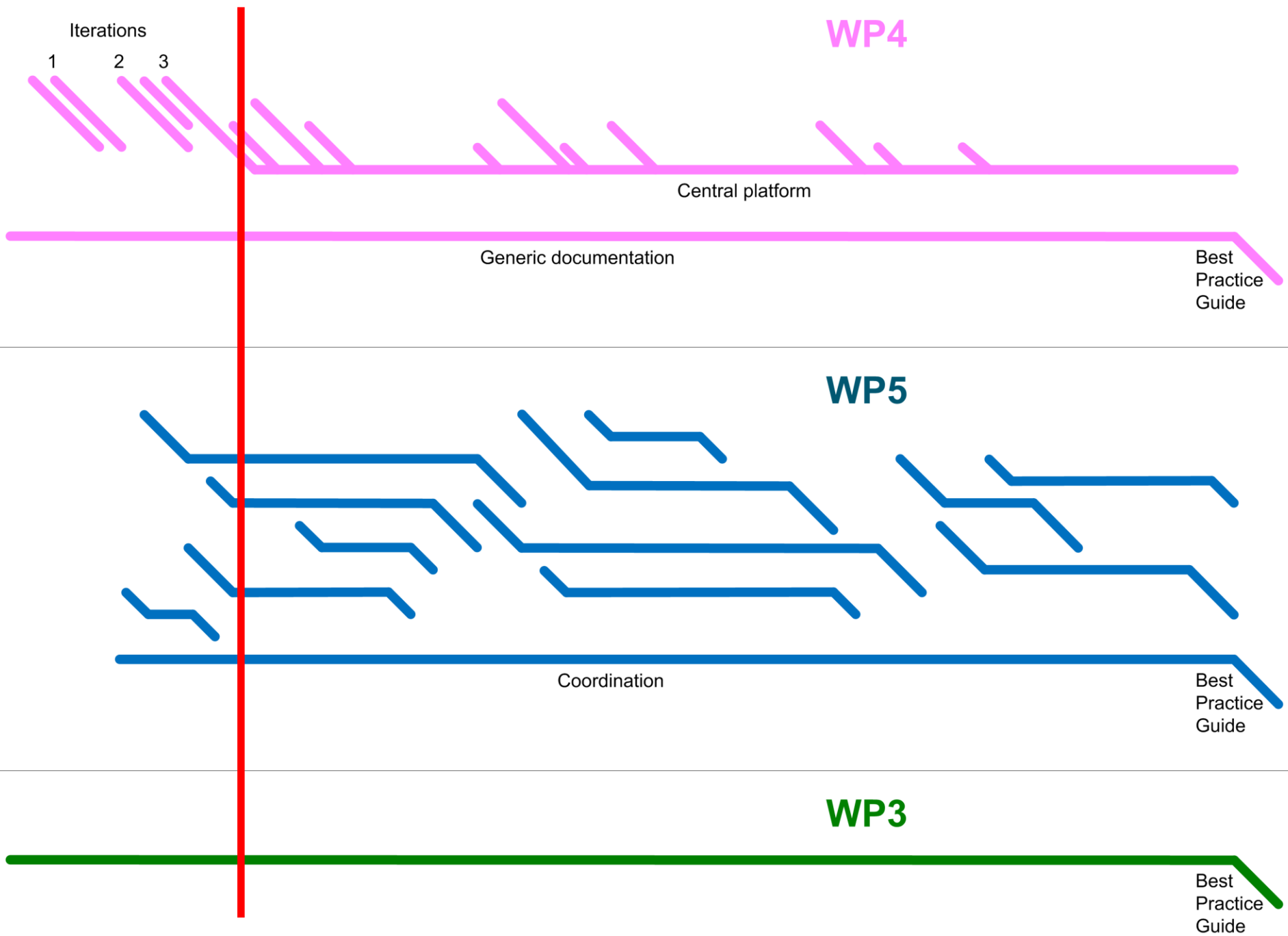


Specify
& build

Run pilot

Evaluate





WP4

WP5

WP3

Iterations

1 2 3

Central platform

Generic documentation

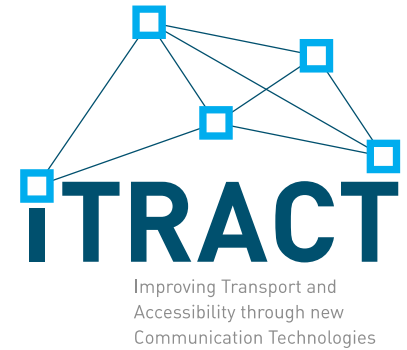
Best Practice Guide

Coordination

Best Practice Guide

Best Practice Guide

Status



□ Iteration 2: suspended

Chosen a few platform alternatives, analyzed them and then discovered One Bus Away

□ Iteration 3: first version of platform ready

Based upon a number of off-the-shelf software suites

□ Ongoing WP4 activities

Amongst others: documentation

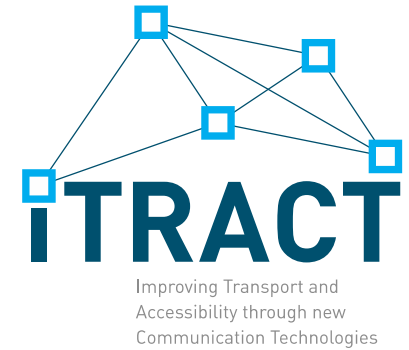
□ WP5: apps for pilots being built

First ones didn't need platform

Platform interfaces now available, including documentation

Agenda

- Introduction
- Status
- **Building Blocks**
- **Live demo**
- **Future**



**(36 slides in 20 minutes
+ demo of 10 minutes)**

Building blocks

□ BB1 = Ride sharing

define trip, match traveller-driver, orchestrate trip incl pickup & payment

□ BB2 = Interactive map

choose stop on map, give stop info, bus info, incl schedule & disruptions

□ BB3 = (Multi-modal) planning

plan trip using relevant info, incl central data and external services

□ BB4 = Financial

arrange payment structure, perform payments, logging, aggregation

□ BB5 = User profiles

incl reputation management

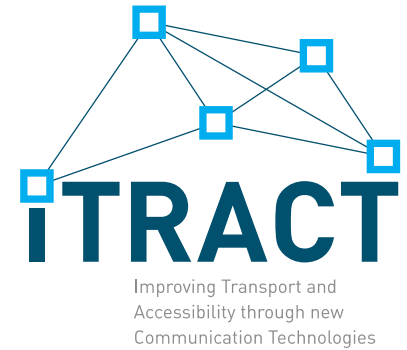
□ BB6 = Dashboard

for user, for staff, combining several sources, incl push

□ BB7 = Information

FAQ, training, incl management of central storage

Building Blocks



□ BB1 = Ride sharing

Enter trip, orchestrate the ride, inform each other, generate route, inform pickup info, actions during pickup, actions during drop off

□ BB2 = Interactive map

Store routes and stops, live updates, service 'bus on demand', show interactive map on frontend

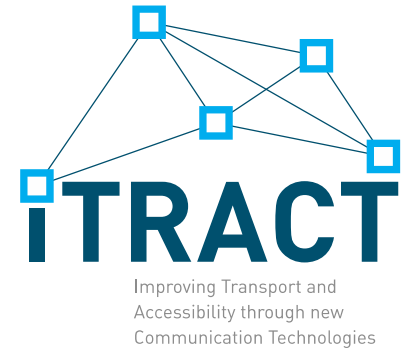
□ BB3 = Planning

Store trips, calculate routes, match traveller-driver, let driver initiate 'start driving', calculate route time and distance

□ BB4 = Financial

Make payments possible, initiate payment from ride, perform payment

Building Blocks



□ BB5 = User profiles

Normal user info, extended user info, trustworthiness, reputation

□ BB6 = Dashboard

Provide info for dashboard, events upon disruptions

□ BB7 = Information

Provide web-based content management

□ BB8 = Traffic management

(added) (cancelled)

□ BB9 = Generic functions

(added) Security functions

Pilot	Building Block	BB 1	BB 2	BB 3	BB 4	BB 5	BB 6	BB 7	BB 8	BB 9
	App									
P1	A1				X			X		
P2	A2a				X	X				
	A2b		X				X			X
P3	A3									
P4	A4a				X					
	A4b	X	X	X			X			
	A4c									
	A4d	X		X	X	X	X	X		
P5	A5									X
P6	A6a							X		
	A6b	X	X		X	X				
...	...									



Off-the-shelf software suites

❑ One Bus Away

Providing info at a bus stop

❑ Open Trip Planner

Planning a ride with public transport

❑ Open Ride

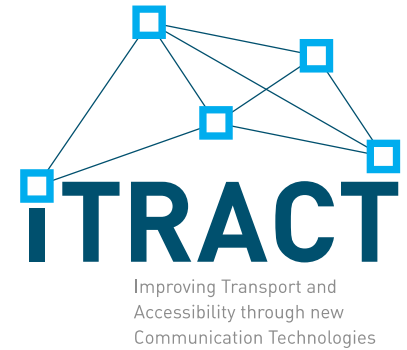
Facilitating car sharing

❑ Open Street Map

Open alternative to Google Maps

❑ WordPress

Content management system



Flexible implementation

- **Main entrance = ‘proxy’**

Forwards to the right ‘virtual machines’ and does orchestration

- **Multiple software suites**

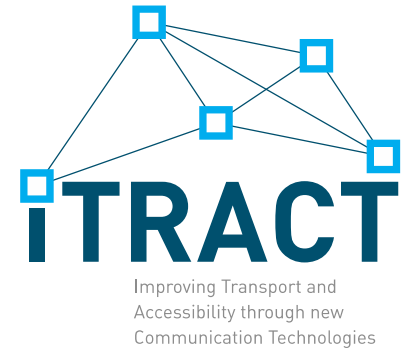
Open Trip Planner, Open Ride, WordPress

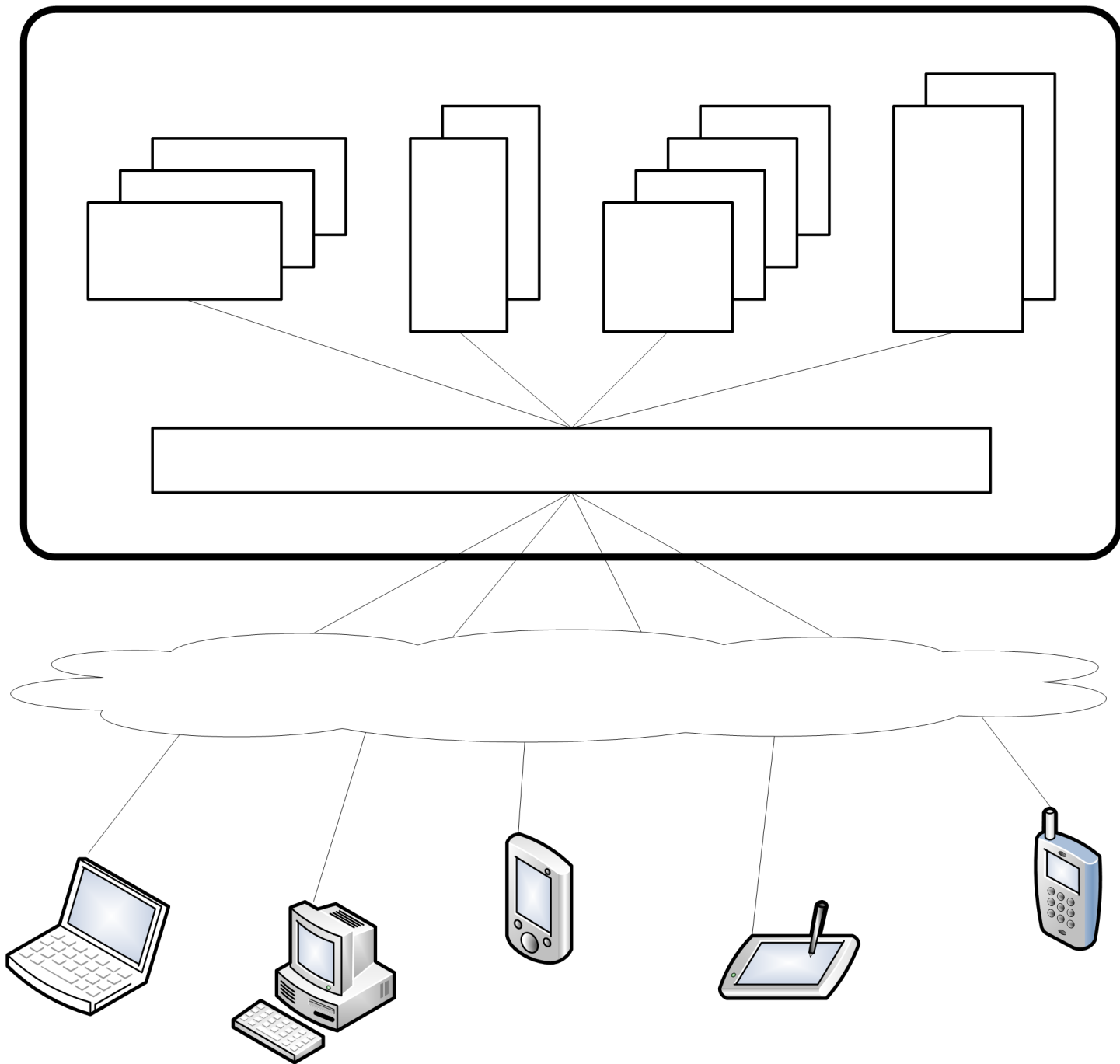
- **Multiple instances**

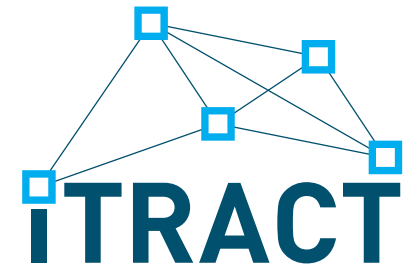
For performance reasons, e.g. for each country-group

- **Open Stack**

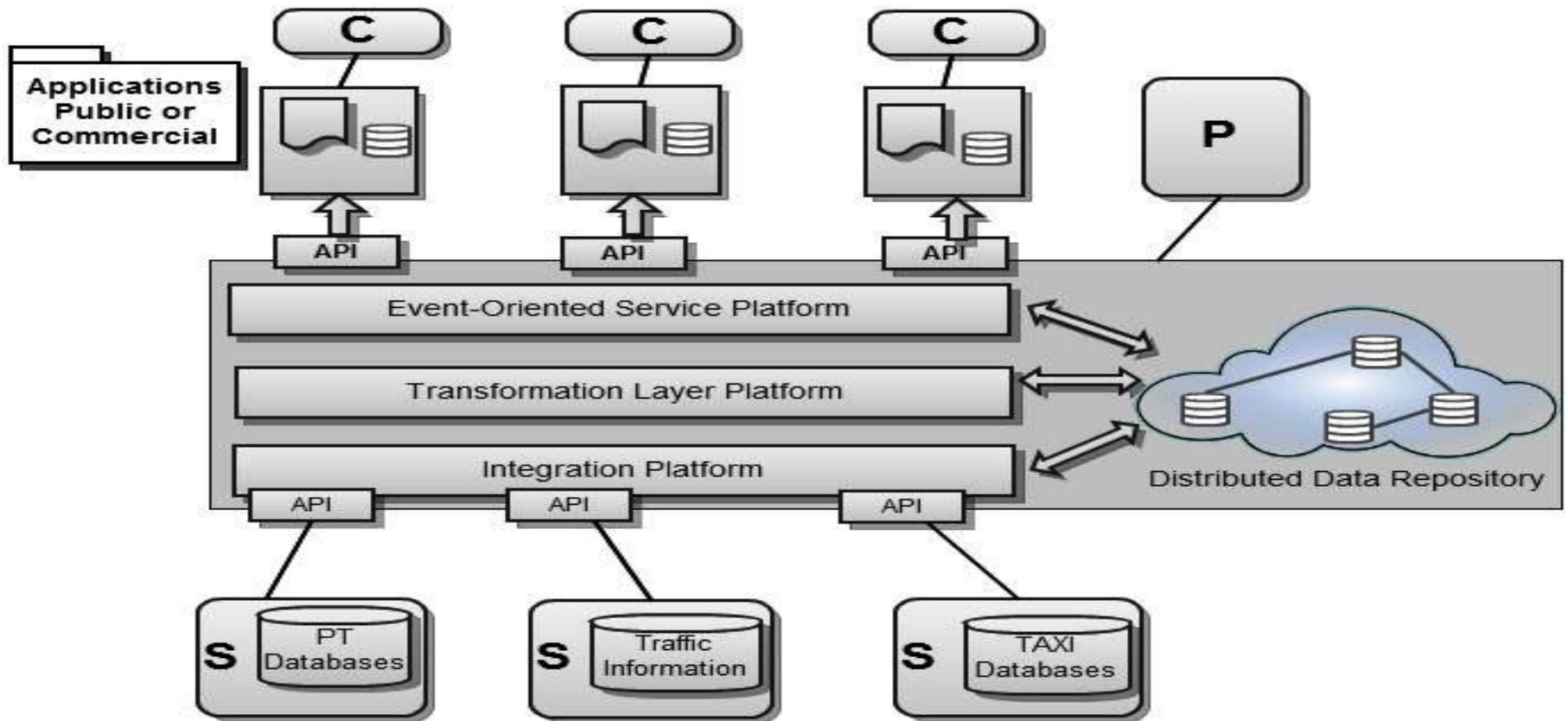
Combining all available hardware, sharing identity management

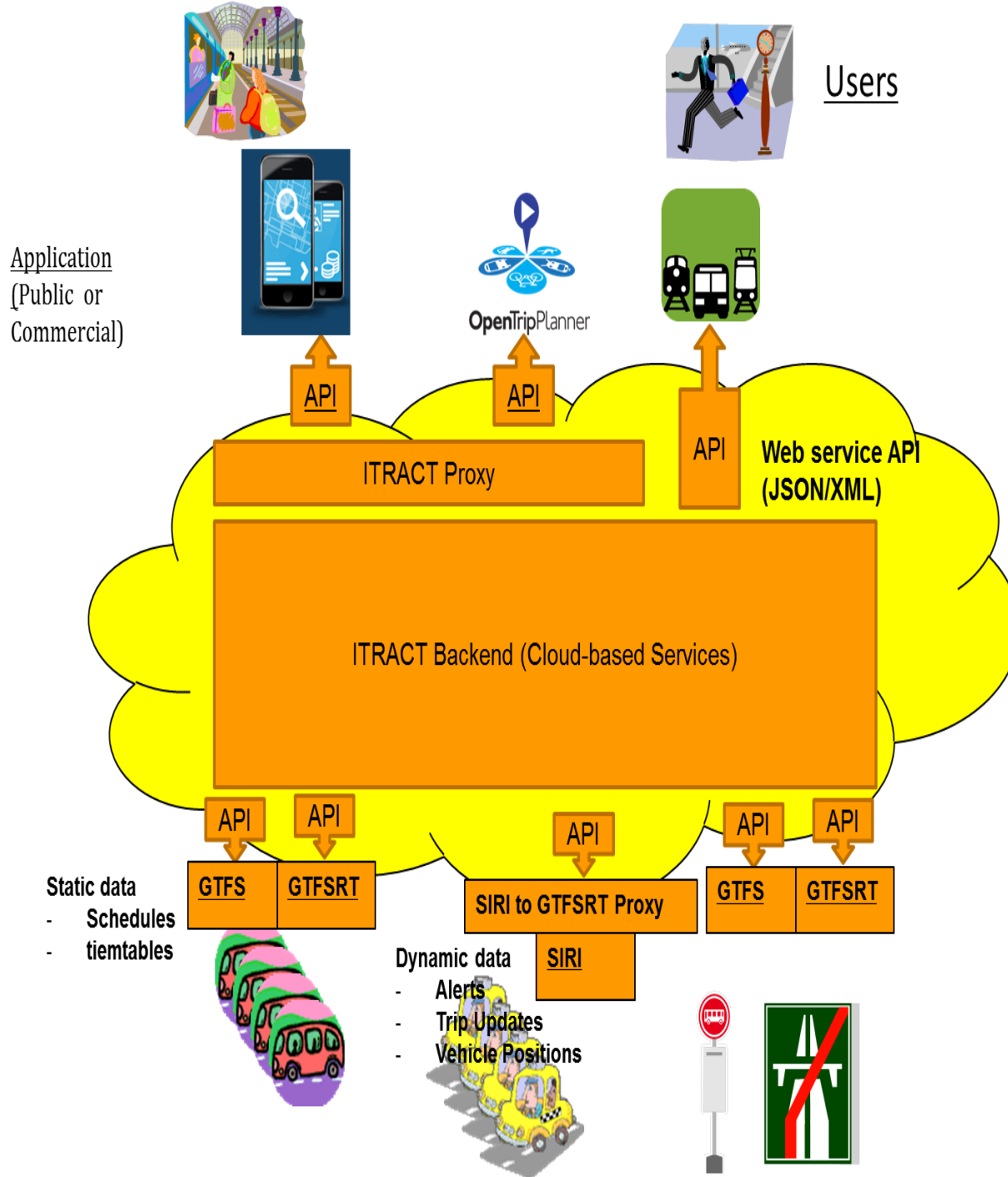






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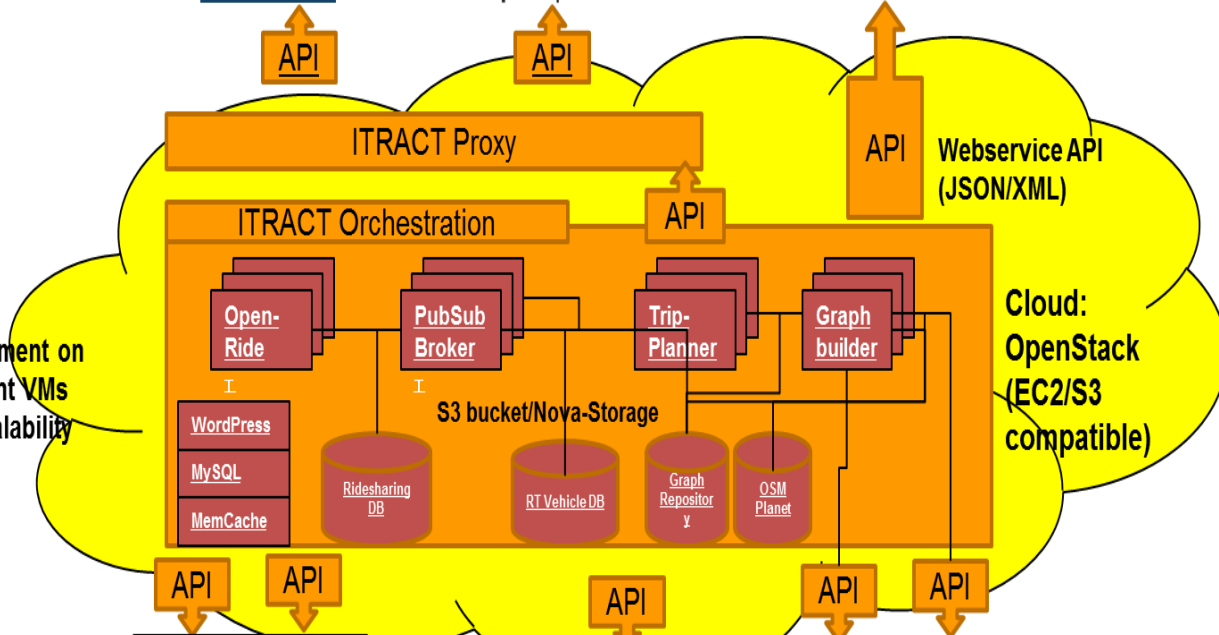


Users

Application
(Public or Commercial)



Deployment on
Different VMs
For scalability

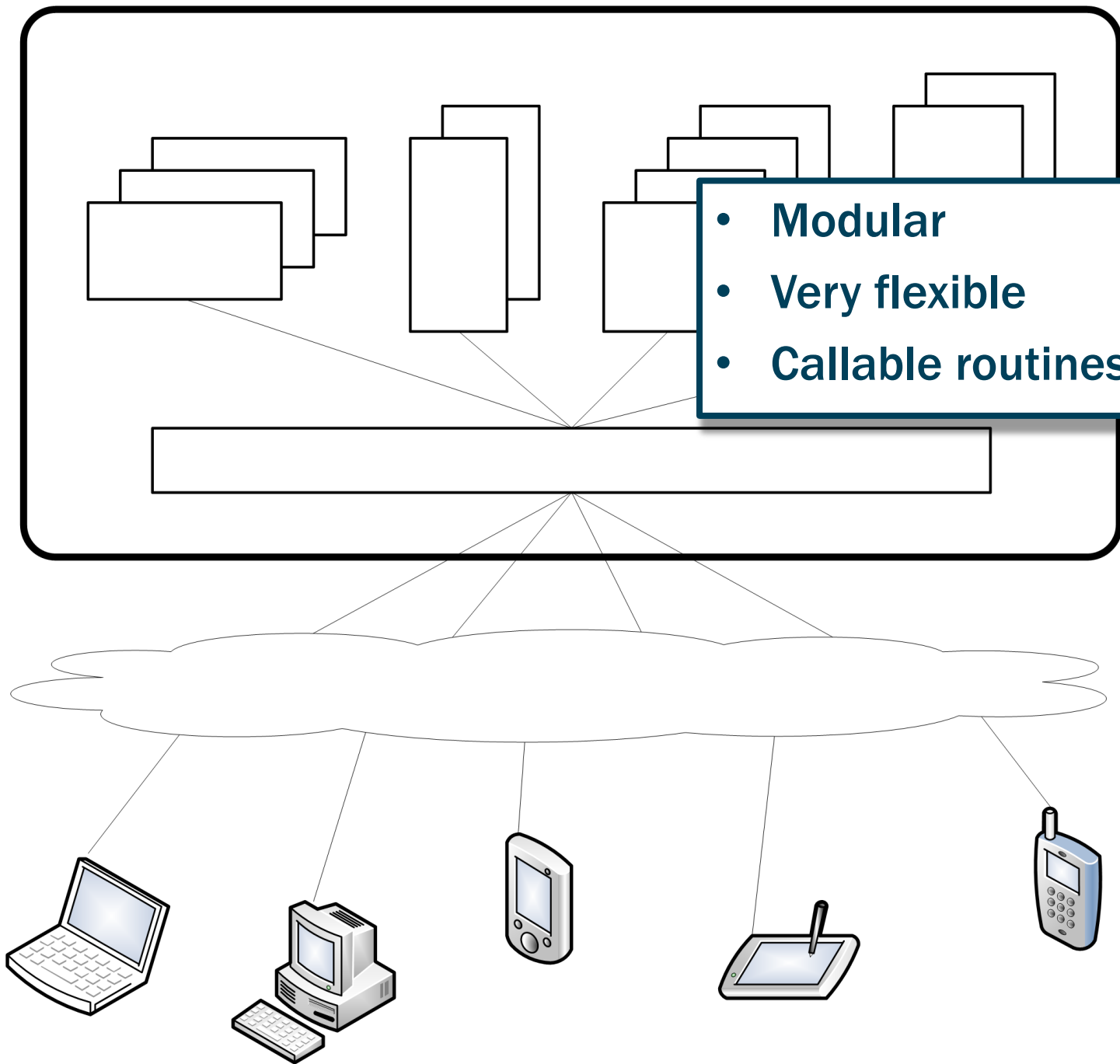


Static data
- Schedules
- tiemtables



Dynamic data
- Alerts
- Trip Updates
- Vehicle Positions





- **Modular**
- **Very flexible**
- **Callable routines**

Normal Basic Auth Digest Auth OAuth 1.0 No environment

http://opentripplanner.nl/opentripplanner-api-webapp/v1 GET URL params Headers (0)

maxTransfers	12	✕
_dc	1369928071316	✕
from	zernikeplein%2C%20 groningen	✕
to	schiphol	✕
arriveBy	false	✕
time	17%3A23	✕
ui_date	30-05-2013	✕
mode	TRANSIT%2CWALK	✕
optimize	QUICK	✕
maxWalkDistance	2000	✕
walkSpeed	0.833	✕
hst	true	✕
date	2013-05-30	✕
toPlace	52.308609%2C4.761645	✕
fromPlace	Zernikeplein%20%20-%20%20%20Gro	✕
URL Parameter Key	Value	

Send Preview Add to collection Reset

Body Cookies (4) Headers (0) STATUS 200 OK TIME 397 ms

Pretty Raw Preview JSON XML

```

1 {
2   "requestParameters": {
3     "to": "schiphol",
4     "arriveBy": "false",
5     "fromPlace": "Zernikeplein - Groningen:53.240671,6.533266",
6     "from": "Zernikeplein, groningen",
7     "date": "2013-05-30",
8     "walkSpeed": "0.833",
9     "mode": "TRANSIT,WALK",
10    "optimize": "QUICK",
11    "time": "17:23",
12    "hst": "true",
13    "maxWalkDistance": "2000",
14    "toPlace": "52.308609,4.761645",
15    "ui_date": "30-05-2013",
16    "_dc": "1369928071316",
17    "maxTransfers": "12"
18  },
19  "plan": {
20    "date": "1369927380000",
21    "from": {
22      "name": "Zernikeplein - Groningen",
23      "stopId": null,
24      "stopCode": null,
25      "lon": "6.53411985598642",
26      "lat": "53.240940829882064",
27      "arrival": null,
28      "departure": null,
29      "orig": null,
30      "zoneId": null,
31      "stopIndex": null
32    },
33    "to": {
34      "name": "perron",
35      "stopId": null,
36      "stopCode": null,
37      "lon": "4.7618114",
38      "lat": "52.3088447",
39      "arrival": null,
40      "departure": null,
41      "orig": null,
42      "zoneId": null,
43      "stopIndex": null
44    },
45    "itineraries": [
46      {
47        "duration": 10744000,
48        "startTime": "1369927380000",
49        "endTime": "1369938614000",
50        "walkTime": 302,
51        "transitTime": 10140,
52        "waitingTime": 302,
53        "walkDistance": 219.06400768605567,
54        "elevationLost": 0,
55        "elevationGained": 0,
56        "transfers": 1,
57        "fare": null,
58        "legs": [
59          {
60            "startTime": "136992780000",

```

Send

Preview

Add to collection

Reset

Body

Cookies (4)

Headers (8)

STATUS 200 OK

TIME 397 ms

Pretty

Raw

Preview



JSON

XML

```
1 {
2   "requestParameters": {
3     "to": "schiphol",
4     "arriveBy": "false",
5     "fromPlace": "Zernikeplein - Groningen::53.240671,6.533266",
6     "from": "zernikeplein, groningen",
7     "date": "2013-05-30",
8     "walkSpeed": "0.833",
9     "mode": "TRANSIT,WALK",
10    "optimize": "QUICK",
11    "time": "17:23",
12    "hst": "true",
13    "maxWalkDistance": "2000",
14    "toPlace": "52.308609,4.761645",
15    "ui_date": "30-05-2013",
16    "d_c": "1369928071316",
17    "maxTransfers": "12"
18  },
19  "plan": {
20    "date": 1369927380000,
21    "from": {
22      "name": "Zernikeplein - Groningen",
23      "stopId": null
```

Pretty

Raw

Preview

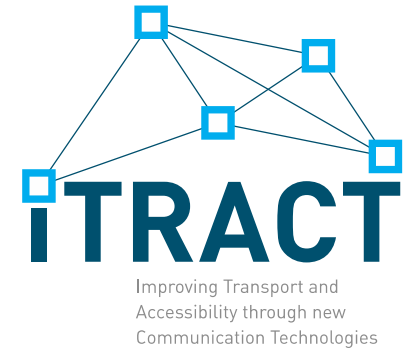


JSON

```
1 {
2     "requestParameters": {
3         "to": "schiphol",
4         "arriveBy": "false",
5         "fromPlace": "Zernikeplein - Gron",
6         "from": "zernikeplein, groningen",
7         "date": "2013-05-30",
8         "time": "10:00"
```

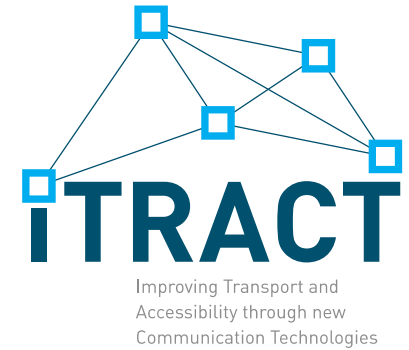
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**(36 slides in 20 minutes
+ demo of 10 minutes)**

Demo



- **Demo? WP5, not WP4!**

WP4 only delivers the central platform

- **WP4 has ‘webservices’**

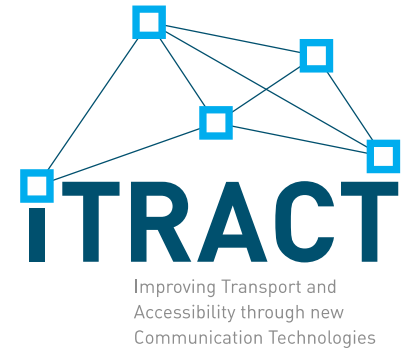
Deliver results, provide trip orchestration, provide payment services,...

- **WP4 does deliver part of the visual results**

E.g. maps with routes

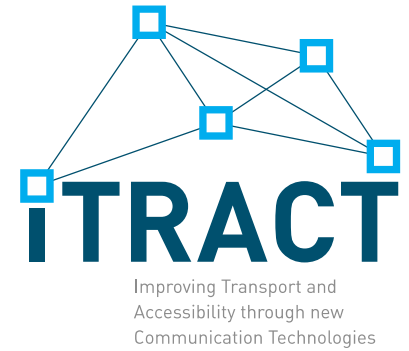
Demo

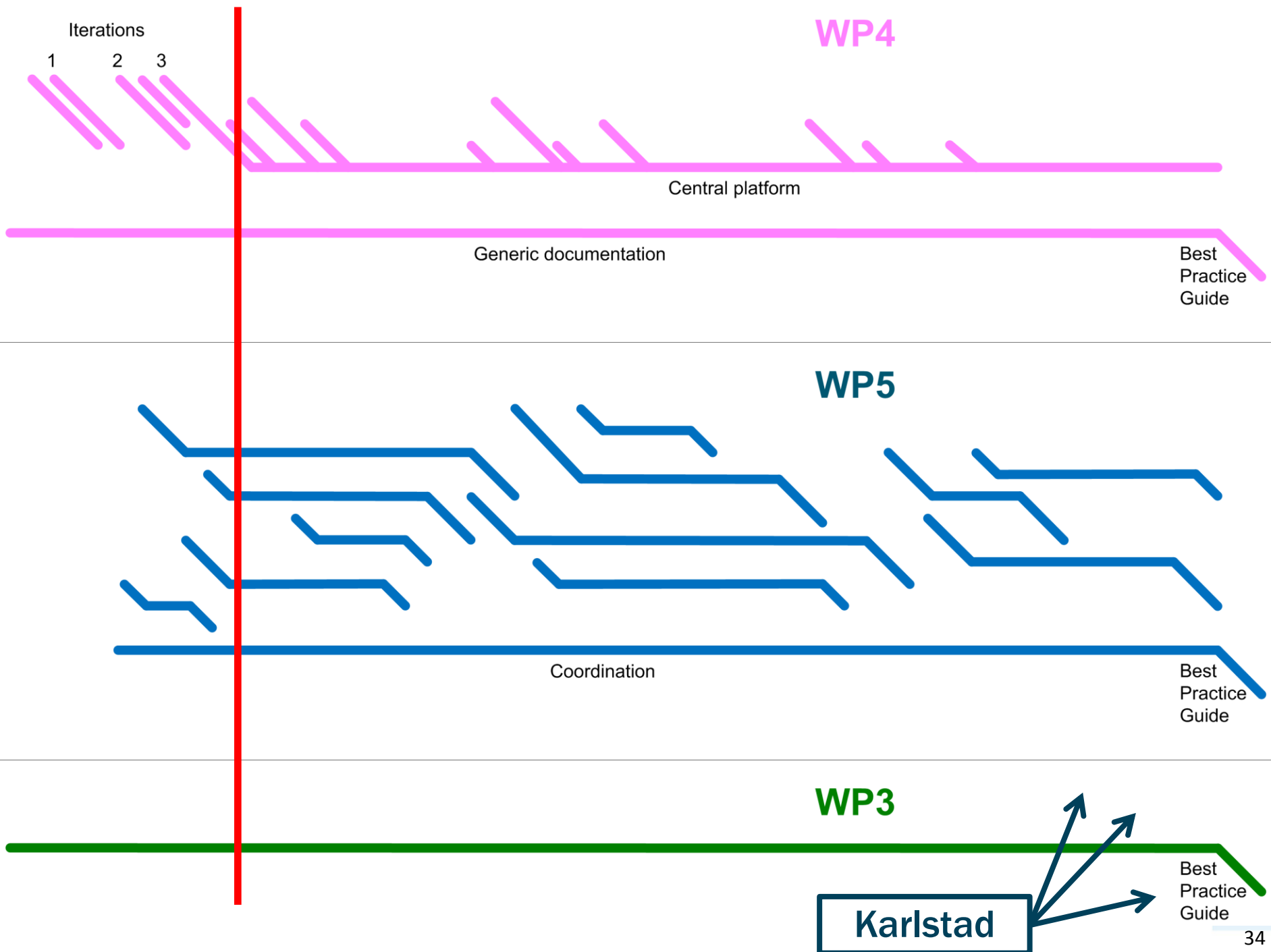
□ Robayet Nasim (KAU)



Future

□ Already discussed:





Iterations

1 2 3

WP4

Central platform

Generic documentation

Best Practice Guide

WP5

Coordination

Best Practice Guide

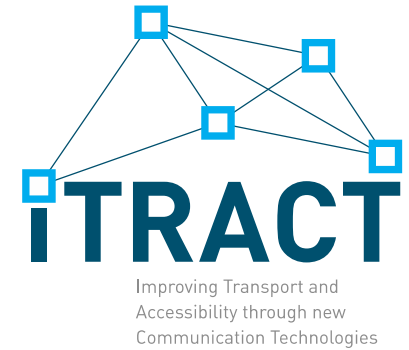
WP3

Best Practice Guide

Karlstad

Future

□ ...is being made today!



**Dr. Bunsen Honeydew and assistant Beaker
The Muppets Lab**

Copyright The Jim Henson Company

Next: WP6

After lunch: WP5

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Backup slides

(instead of the live demo)



Where Is Your Bus?

Use this tool to find real-time arrival information for public transit stops from all the [transit agencies](#) supported by OneBusAway.

You can quickly search for stops by *address, route, or stop number*. You can also zoom into the map to see stops for a specific location.

Search for stops:

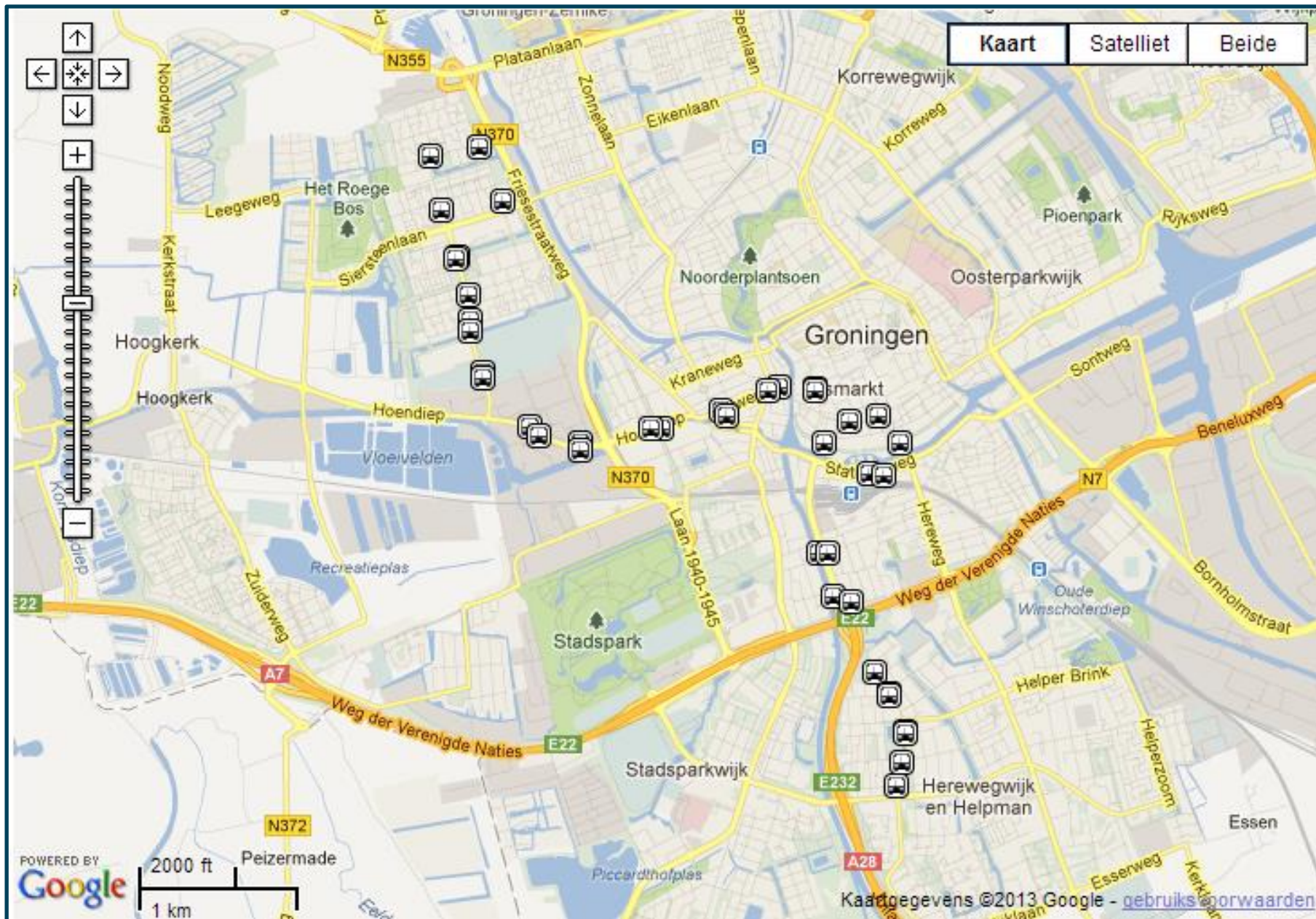
By address (ex. "3rd and pike") or route number (ex. "44" or "71").

[Link to the current view](#)

The map shows a street grid in Groningen, Zuiderdiep. A popup window is open over a bus stop icon. The popup contains the following information:

- Location: Groningen, Zuiderdiep
- Stop # QBUZZ|10008360
- Links: [Real-time arrival info](#), [Complete timetable](#)
- Routes: 13, 35, 39, 83, 637, 639

The map includes a search bar at the top, navigation controls on the left, and a scale bar at the bottom. The popup also has a close button (X) in the top right corner.



One Bus Away - website

Groningen, Zuiderdiep

Stop # QBUZZ|10008390

<u>route</u>	<u>destination</u>	<u>minutes</u>
6	<u>Hoonsemeer via Grote Markt</u> 02:40 - scheduled departure	-4
1	<u>De Wijert via Grote Markt</u> 02:41 - scheduled departure	-3
4	<u>P+R Hoogkerk via CS</u> 02:44 - scheduled departure	NOW
3	<u>Vinkhuizen via CS</u> 02:45 - scheduled departure	NOW
6	<u>Centraal Station via Kardinge</u> 02:48 - scheduled departure	4
5	<u>Martini Zkhs via Paddepoel</u> 02:49 - scheduled departure	5
306	<u>Leek Oostindie via CS en P+R Hoogkerk</u> 02:50 - scheduled departure	6
22	<u>P+R CITYBUS Haren P+R/A28 via UMCG</u> 02:50 - scheduled departure	6
11	<u>Centraal Station via Station Noord</u> 02:52 - scheduled departure	8
6	<u>Hoonsemeer via Grote Markt</u> 02:55 - scheduled departure	11
2	<u>De Punt via Centrum</u> 02:56 - scheduled departure	12
3	<u>Vinkhuizen via CS</u> 03:00 - scheduled departure	16

One Bus Away
smartphone



Reisplanner

PLAN JE REIS

VAN BRAKELPLEIN ✕

14:55 - 18:22 207 min

2 Overstappen

15:25 - 18:25 180 min

2 Overstappen

15:55 - 19:25 210 min

3 Overstappen

Begin bij Van Brakelplein

Lopen naar Groningen Spoor 2b

Over 19 minuten - 1.22 km

↓ Toon details ↓

Trein Intercity naar Rotterdam Centraal

15:16 Vertrek Groningen Spoor 2b

115 minuten

17:11 Aankomst Utrecht Centraal Spoor 8

Uitgevoerd door NS.

Lopen naar Utrecht Centraal Spoor 7

↓ Toon details ↓

Trein Intercity naar Schagen

17:25 Vertrek Utrecht Centraal Spoor 7

27 minuten

17:52 Aankomst Amsterdam Centraal Spoor 8a

Uitgevoerd door NS.

Lopen naar Centraal Station

Terugreis

Bewerk

Print

Link

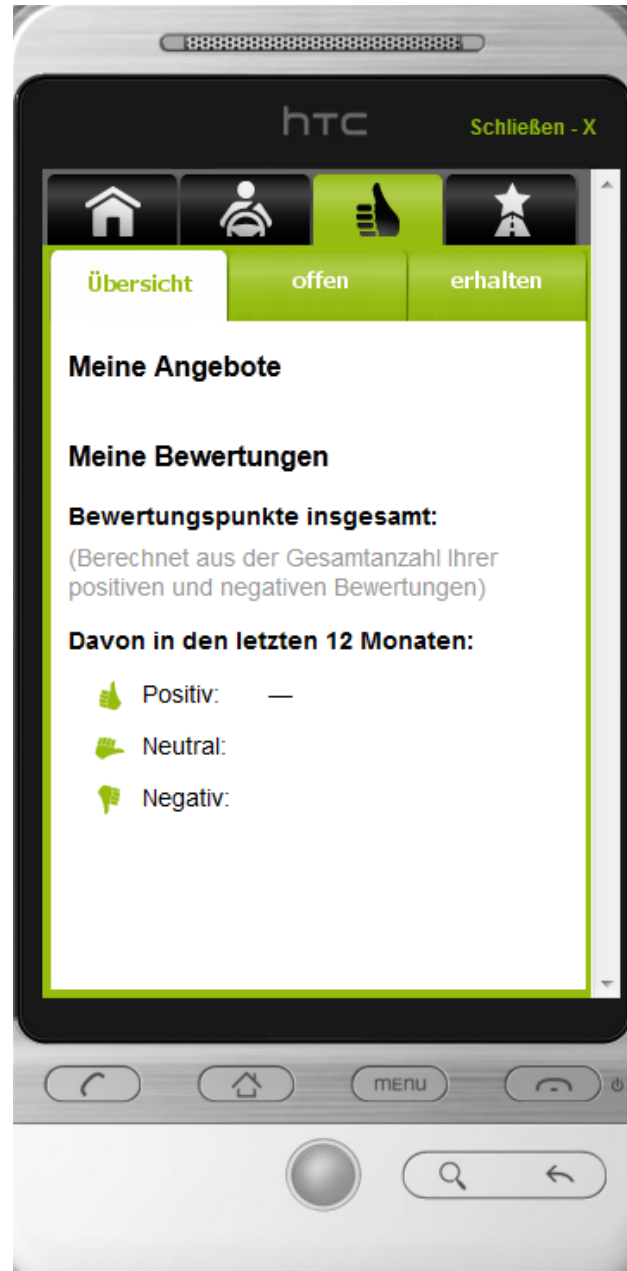
License Attribution



Open Trip Planner - website



Open Ride
smartphone



Open Ride
smartphone



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