

AAS-Platform:

An Innovative Response to Unmet Needs in Provisioning Individualized ICT-based Solutions

**European Workshop on
“Support for companies developing
Ambient Assisted Living solutions
to achieve the market breakthrough”**

June 7th, 2011 – Brussels

Reza Razavi, Ph.D.



**Ambient Activity Systems SARL
LUXEMBOURG**



Development History – AAS (Since 2007)



AAS

Ambient Activity Systems



MINISTÈRE DE L'ÉCONOMIE
ET DU COMMERCE EXTÉRIEUR



centre d'entreprise et d'innovation



Development History – Àmbiance (2004-06)



Àmbiance project
Reza Razavi (PI)



Ralph Johnson
Joe Yoder
D. Manolescu

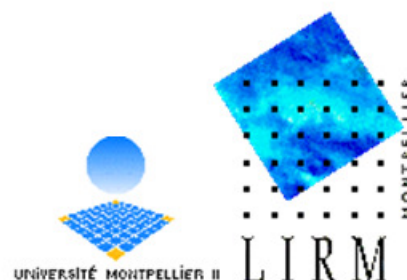
Gul Agha,
Kirill Mechitov,
Sameer Sundresh
Reza Razavi (visiting scholar)



Noury Bouraqadi



Jean-Francois Perrot, Jean-Pierre Briot, Alain Cardon, Serge Stinckwich.



Christoph Dony



Vincent Ginot,
Hervé Richard



DES & BioMedical Informatics
ERCIM Working Group

Ambiance publications

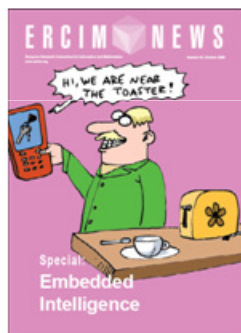
<http://osl.cs.uiuc.edu/people?user=razavi>



Reza Razavi, Kirill Mechitov, Gul Agha, Jean-Francois Perrot. "Ambiance: A Mobile Agent Platform for End-User Programmable Ambient Systems," J.C. Augusto and D. Shapiro (eds.), *Advances in Ambient Intelligence, Frontiers in Artificial Intelligence and Applications (FAIA)*, vol. 164, IOS Press, 2007.



Kirill Mechitov, Reza Razavi, Gul Agha. "Architecture Design Principles to Support Adaptive Service Orchestration in WSN Applications," *International Workshop on Wireless Sensor Network Architecture*, 2007,



Reza Razavi. "Ambiance: A Platform for Macroprogramming Personalized Ambient Services," *European Research Consortium for Informatics and Mathematics News (ERCIM News)*, vol. 67, special theme "Embedded Intelligence", pp. 33-34, October 2006.



Razavi, Noury Bouraqadi, Joseph William Yoder, Jean-François Perrot, Ralph Johnson. "Language support for adaptive object-models using metaclasses," *International Journal Computer Languages, Systems and Structures*, vol. 31, number 3-4, pp. 199-218, Elsevier, October/December, 2005.



6th OOPSLA Workshop on Domain-Specific Modeling, Portland, Oregon, USA, 22 October 2006.



Massively Multi-agent Systems I: First International Workshop, MMAS 2004, Kyoto, Japan, December 10-11, 2004.



12es Journées de Rochebrune: Réflexivité et auto-référence dans les systèmes complexes, Du 24 Janvier au 28 Janvier 2005, Rochebrune, Megève, France

One Network-based Personal Assistant per Older Person in Europe



**The Ambient Assisted Living Joint Programme
INFO DAY about call 3
31.05.2010 – Brussels**

Reza Razavi, Ph.D.



AAS (Ambient Activity Systems) SARL

**Ecostart – centre d'entreprise et d'innovation
Bâtiment 1, Rue de l'industrie
L-3895 Foetz, LUXEMBOURG**

One Network-based Personal Assistant per Older Person in Europe

Port of Questionnaires

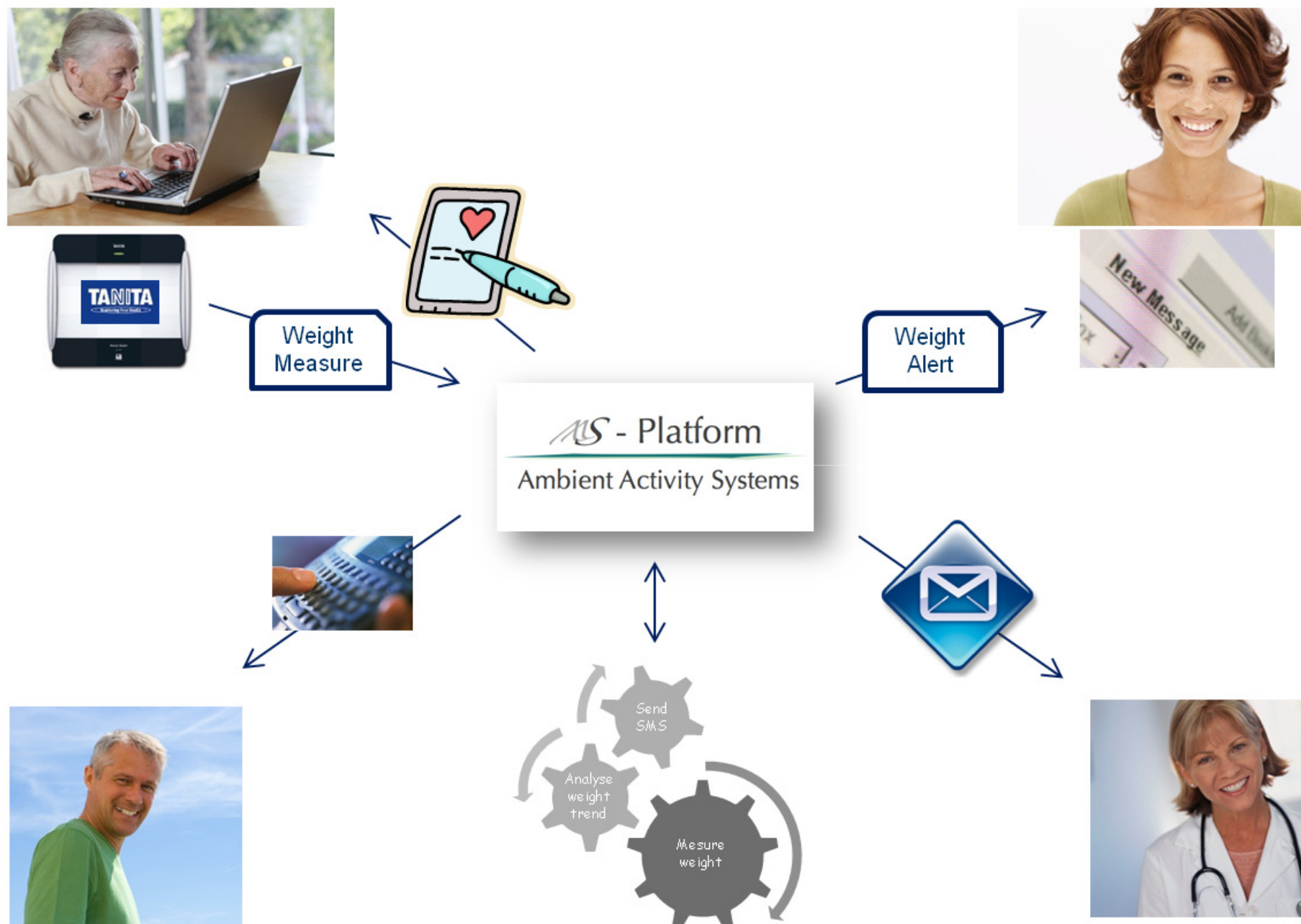
**The Ambient Assisted Living Joint Programme
INFO DAY about call 3
31.05.2010 – Brussels**

150 000 uPaaS by 2015

Passed Evaluation, Not Yet Funded

Agenda

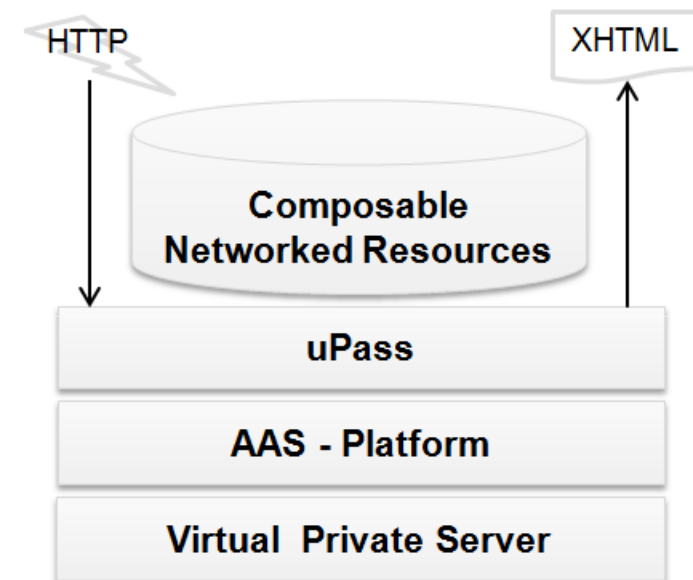
- Development History
- Deployment History
- Technical Issues Solved
- Openness for Supporting Different Products & Services
- Availability Conditions for Port Projects
- A Typical Port Project Plan
- Benefits for
 - Product & Service Stakeholders
 - Market Breakthrough
 - AAS & AAS-Platform



Managing Diversity of Resources

Uniformly represented as composable & networked resources:

- Devices
- Domain concepts
- Domain (“atomic”) services
- User-generated content
- User-generated networks
- User-generated services
- Domain objects

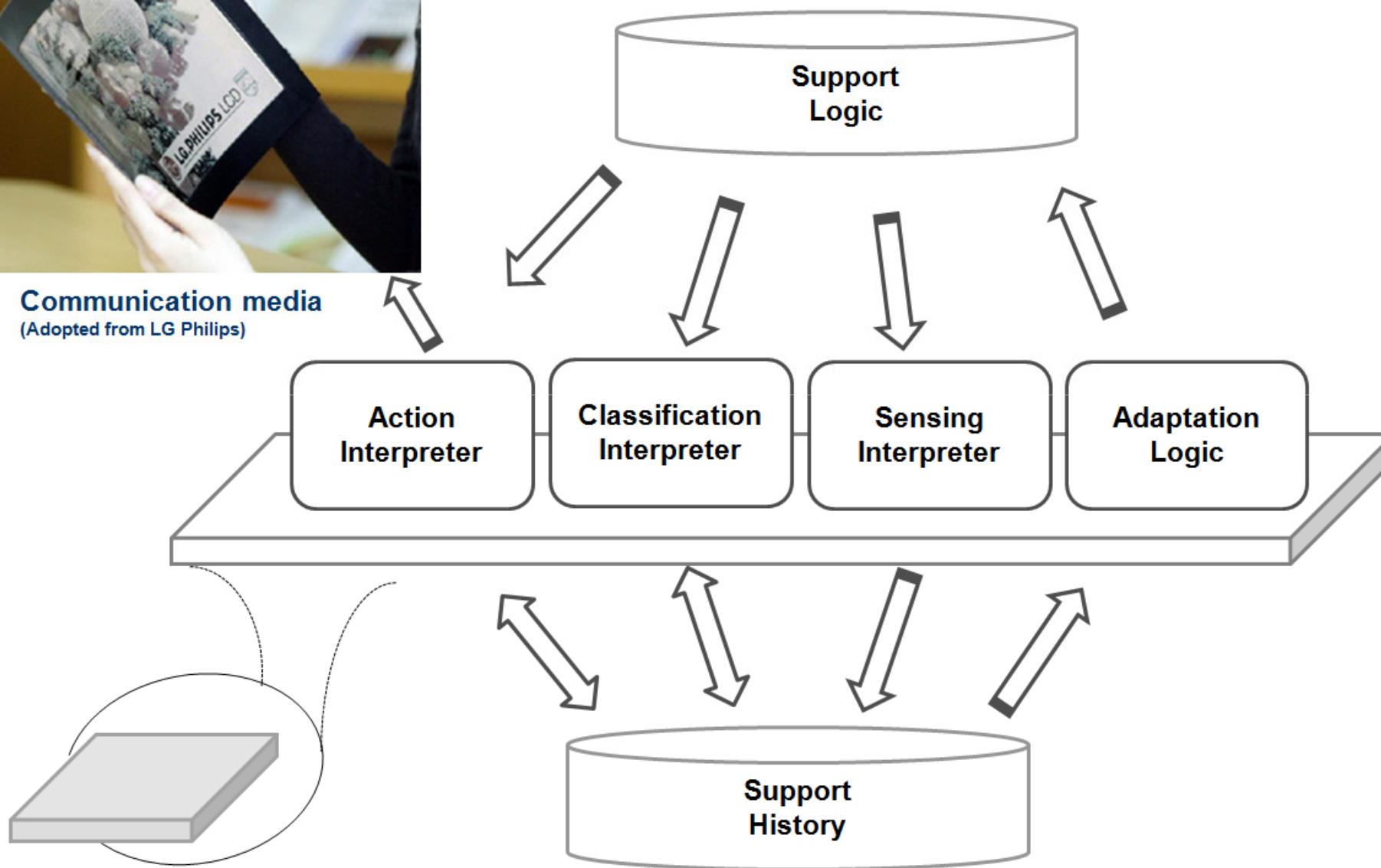


+ Late binding of resource references

Managing Dynamicity of Situations



Communication media
(Adopted from LG Philips)



Companion N

Managing Complexity of Interactions & Coordination

1. Measure wirelessly Jane's weight on a weekly basis.
2. Whenever there is a loss of more than one kilogram per week, then:
 - a. Send an email to Jennifer.
 - b. Send an SMS to Joe.
 - c. Add an information entry to Julie's agenda.
 - d. Add an information entry to Jane's "ambient" 'info

Managing Complexity of Interactions & Coordination

UGS - Demo website: Twi... x

www.afacms.com/cats/activities/activitytheme/activity/?_s=bzEtYDFLLwnuCtxg&_k=K4dCBK07fasyYIGM

Home Examples **Catalogues** Blog About

Theme: Communication >> Activity: Twitter – Example 1

Definition

Main Tweet +

Action: Main

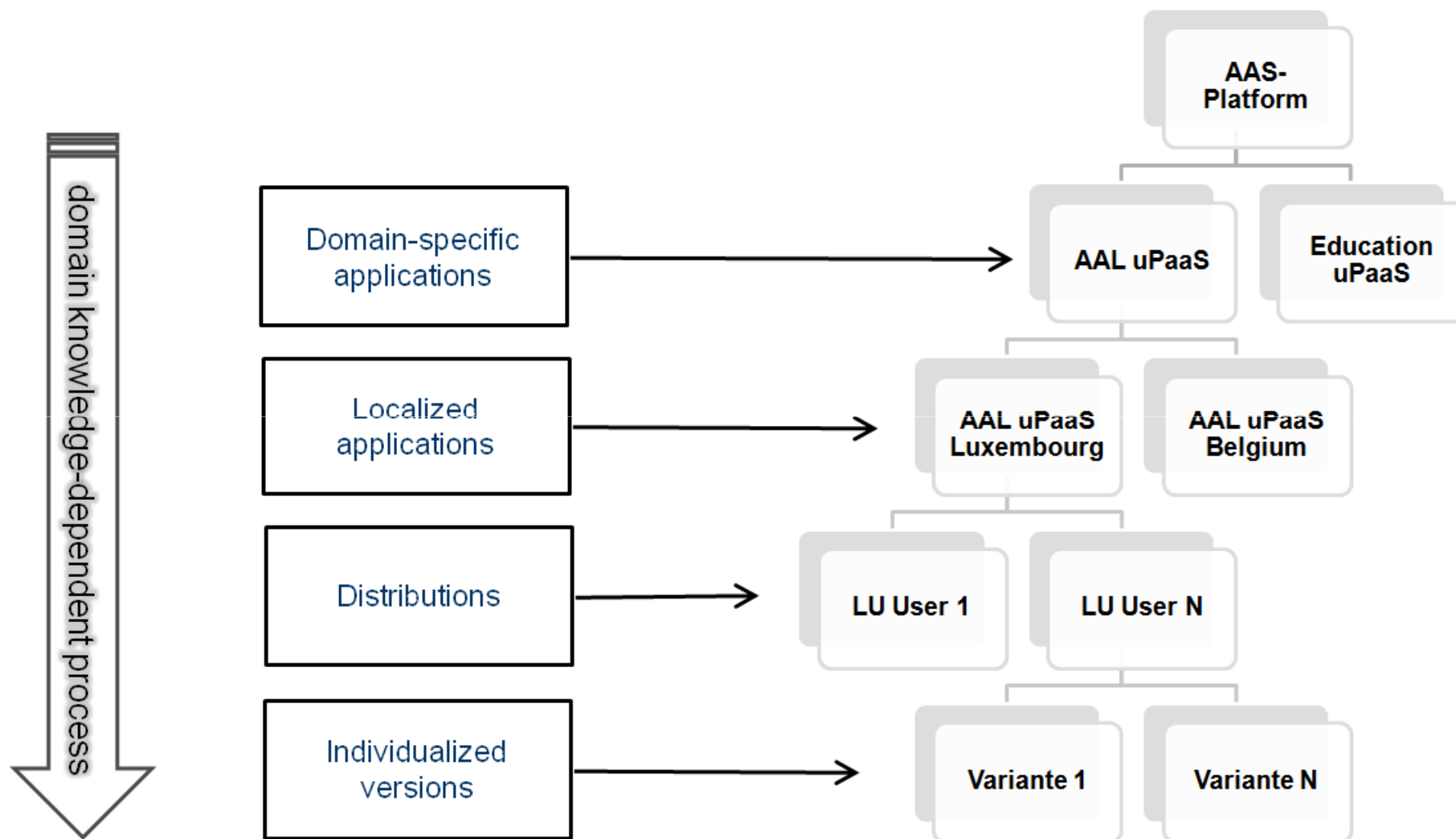
Operations

- 1 - Login to Twitter
- 2 - While true ([[Tweet]])
- Add new Operation ...

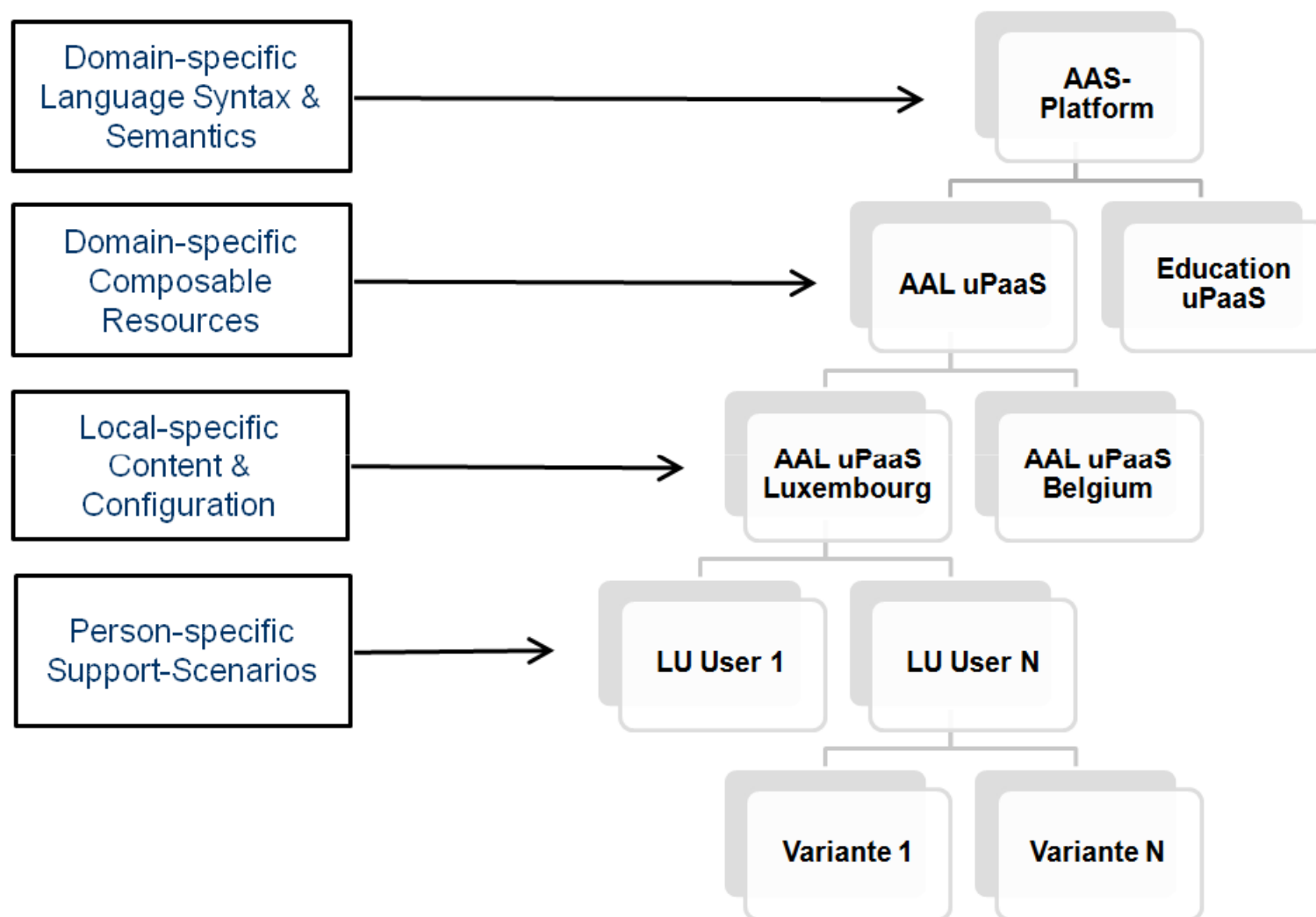
Design action Edit action Copy action Move action

Execute activity No Lifecycles Export XML Export RSS Import action

Deployment Methodology



Openness for Supporting Different Products & Services



Availability Conditions for Port Projects

- MIT free License for Port Projects
- No Hidden Patent
- Infrastructure:
 - Scientific and technical documentation
 - Standard object and web programming tools
 - Network of human resources for
 - Training
 - Support (fixing bugs, handling requests, etc.)
- Low resource consumer by design

**Thank you very
much for your
attention!**

<http://www.urfid.biz/about/call/>



A Typical Port Project Plan

- **WP1:** Solution family specification
- **WP2:** Breaking requirements into “language ingredients”
- **WP3:** Language implementation (AAS + 1 to 2 prog.)
- **WP4:** Refactoring solutions to composable components
- **WP5:** Business plan definition
- **WP6:** Creating sales and after sales services
- **WP7:** (Very) large-scale cloud-based deployment

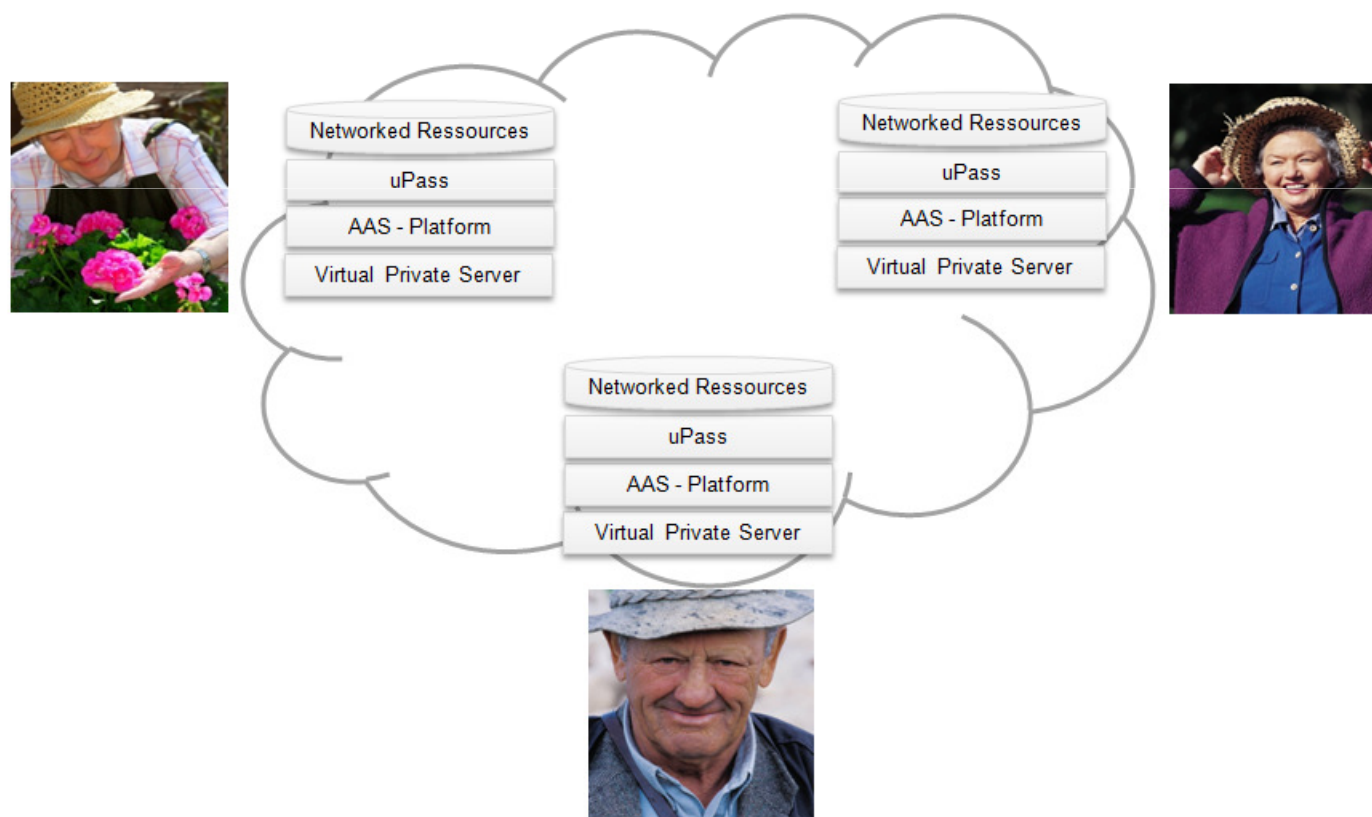
➔ Decentralized process with limited role for AAS (core technology provider)

Benefits for Products & Services Stakeholders

- (Very) large-scale solution provisioning via a standard and extendable self-serve platform
- Smooth transition from “One-Size-Fits-All” schema to a family of individualized and adaptative solutions
- Opportunity to capitalize on uncertainty, diversity and change through participative design (the Pull Model)

Benefits for Market Breakthrough

Effective and (very) large-scale deployment of extendable self-serve platforms including a minimum set of realistic and professionally supported solutions



Benefits for AAS & AAS-Platform

- Development of the technology start-up
- Refinement & extension of AAS-Platform
- Large-scale deployment references
- Valuable partnerships

Please also check

<http://www.urfid.biz/about/call/>

Contact

AAS (Ambient Activity Systems)

Web technology meets dynamics of changing economy

Reza RAZAVI

**Ph.D. Computer Science
Chief Technology Officer**

**(+352) 621 50 46 53
razavi@aas.lu**

**52, Rue des Eglantiers
L-1457 Luxembourg (LUXEMBOURG)**

