

TheRoute

Tourism and Heritage Routes including Ambient Intelligence with Visitors' Profile Adaptation and Context Awareness

Code 23477

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TheRoute Consortium involves 3 Higher Education Institutions and 1 Enterprise

P. PORTO

isep Instituto Superior de Engenharia do Porto

Instituto Politécnico de Viana do Castelo

DOUROAZUL

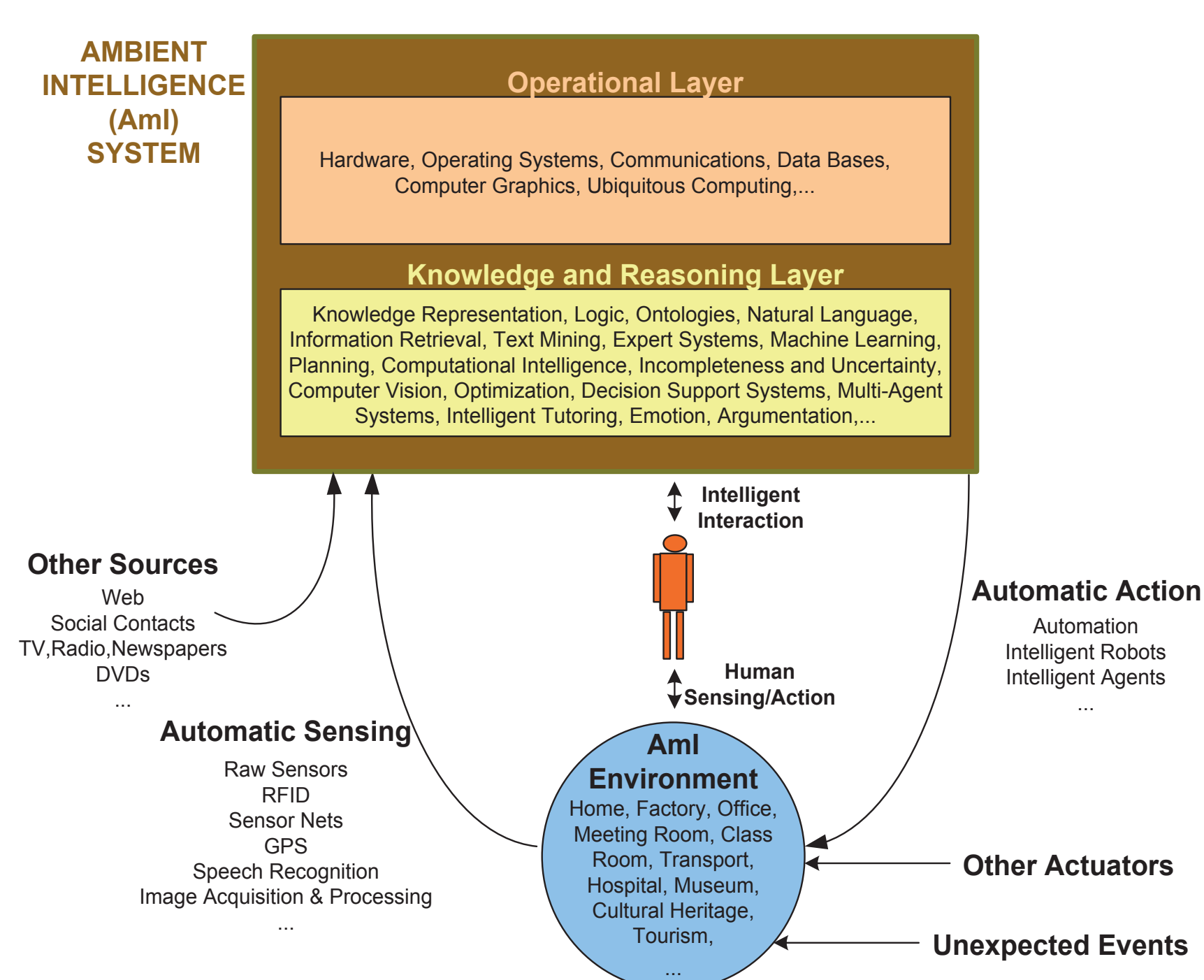
Main features of TheRoute

- Challenge: Conduct studies, research and experimentation around the challenge of automatic generation of routes for visitors to points of interest (POI) related with Tourism and Heritage
- Focus region: North of Portugal, developed around a location (urban or rural) or path (eg. Portuguese Santiago Route or Douro) or around a theme (eg. musician, writer). POI will be modelled
- Suggested routes should fit the profile of visitors and groups of visitors, including aspects like emotion/mood/personality, and be aware of the context (eg. weather, security)
- Take into account mobility between points of interest (sustainability), inherent constraints (schedules, accessibility) and issues related to health and well-being
- Use of Artificial Intelligence algorithms and Ambient Intelligence
- Complete Life-Cycle of the Visitors Experience in the Route
- Use of different platforms (desktop, notebook, tablet, smartphone)

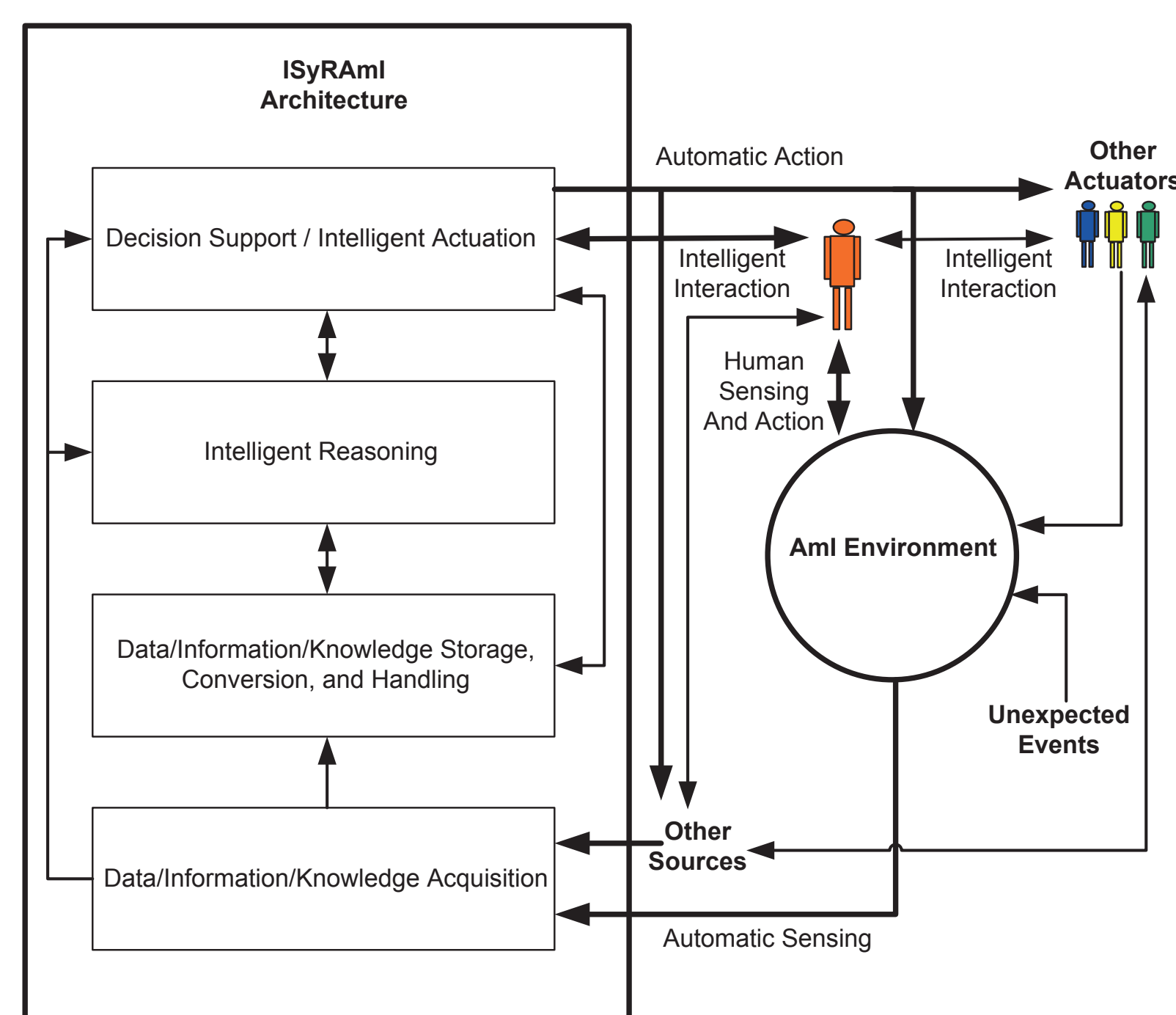
Activities (Work Packages) of the Project

- A1 – Knowledge Acquisition on general and specific Routes
- A2 – System Architecture based on Ambient Intelligence
- A3 – Modeling of Points of Interest, Visitors' Profile, and Context Awareness
- A4 – Mobility, Health, Wellbeing and Accessibility in Routes
- A5 – Development of algorithms and programs for Route Generation
- A6 – Experimentation of TheRoute system components
- A7 – Organization and Management of the project
- A8 – Divulagation, Dissemination and Valorization

Ambient Intelligence (Aml) Architecture

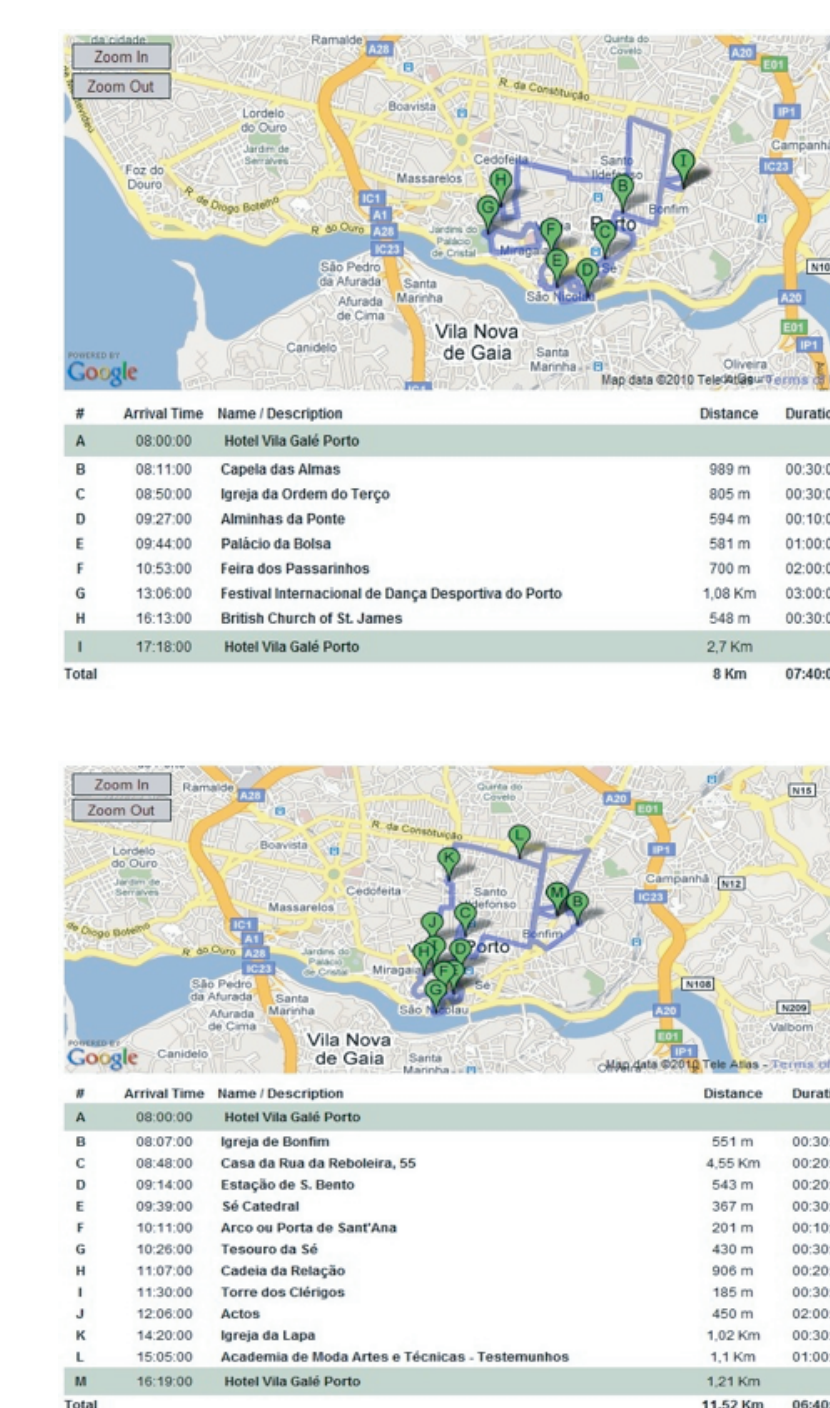


based on paper - C. Ramos, J.C. Augusto, D. Shapiro, "Ambient Intelligence: the next step for Artificial Intelligence". IEEE Intelligent Systems -Special Issue on Ambient Intelligence



An example of an Ambient Intelligence Architecture (ISyRAml, used in project EKRUCAmI)

Intelligent Tourism Recommendation System



Tours created by TOURSPAN project

TheRoute Research Team by areas

17 PhD researchers in a multidisciplinary project

ICT area Carlos Ramos (Principal Investigator of TheRoute); Ana Almeida; Constantino Martins; Goreti Marreiros; Joel Ricardo; Lino Figueiredo; Lino Oliveira; Luiz Faria; Ricardo Santos; Vitor Castro

Heritage area Fátima Lambert; Joaquim José Escalreira; Sérgio Veludo

Tourism & Hospitality area Ana Filipa Brandão; Bruno Ribeiro; Mónica Oliveira; Rui Saraiva

Literature & Intercultural Studies areas Clara Sarmiento; Sandra Ribeiro; Sara Pascoal

Music area Ana Liberal

Health area Rui Macedo

Marketing area Sandrina Teixeira

Business & Administration area Carla Vaz; Luísa Casanova

Previous Publications related with the project (impact by citations)

Ramos, C., Augusto, J. C., & Shapiro, D. (2008). Ambient intelligence—the next step for artificial intelligence. IEEE Intelligent Systems, 23(2), 15-18. **(325 citations)**

Lucas, J. P., Luz, N., Moreno, M. N., Anacleto, R., Figueiredo, A. A., & Martins, C. (2013). A hybrid recommendation approach for a tourism system. Expert Systems with Applications, 40(9), 3532-3550. **(55 citations)**

Marreiros, G., Santos, R., Ramos, C., Neves, J. (2010). Context aware emotional model for group decision making. IEEE Intelligent Systems, 25(4), 31-39. **(45 citations)**

Santos, R., Marreiros, G., Ramos, C., Neves, J., & Bulas-Cruz, J. (2011). Personality, emotion, and mood in agent-based group decision making. IEEE Intelligent Systems, 26(6), 58-66. **(26 citations)**

Coelho, B., Martins, C., & Almeida, A. (2009, August). Adaptive tourism modeling and socialization system. In Computational Science and Engineering, 2009. CSE'09. International Conference on (Vol. 4, pp. 645-652). IEEE. **(17 citations)**

Previous projects

EKRUCAmI (EU FP7 project Marie Curie n.318878 – Ambient Intelligence

TOUSPLAN (FCT project n. 74310) – Planning of tours

PSIS (FCT project n. 72152)

– Planning of transports for Tourism

TOURSPorto (with Porto City Hall and Porto Digital)

– Visitor's Profile in tours

ArgEmotionAgents (FCT project n.56259)

– Affective Computing

GIGADESSEA (FCT project n.108524)

– Group Decision Support

How TheRoute responds to Strategic Documents/Programmes

– In "Tourism Action Plan for the North Region of Portugal" we observe that from the 5 priority axes of intervention there are 2 related with the purposes of TheRoute. Priority Axis 3 (Marketing and Regional Tourism Promotion) and Priority Axis 5 (Promotion, Monitoring, and Information – "Intelligence") denote the need to the creation of intelligent systems to help in the several phases of the process.

– The **Smart Specialization Strategy (RIS3) from North Region of Portugal** involves the "Symbolic Capital, Technologies and Tourism Services" domain. Other domains from RIS3 are the "Resources and Economy of the Sea" (Nautical Tourism), the "Agro-environmental and Food Systems" (Local Economy), and the "Life and Health Sciences" (Health and Well-being Tourism).

– Three **Societal Challenges from H2020** are considered: "Health, Demographic Evolution, and Well-being"; "Smart and Green Integrated Transports"; and "Europe in a World of Changing – inclusion, innovation, and reflective society".

Budget

Total € 149997.96

P.PORTO € 73241.25

ISEP € 39594.80

IPVC € 19627.00

DouroAzul € 17534.36

Mainly human resources (existing HR and 3 fellowships)