



# Contract No. 004420

eu-DOMAIN - enabling users for Distance-working & Organizational Mobility using Ambient Intelligence Networks

# D1.2.1 Period 3 Activity Report

Specific Targeted Research or Innovation Project

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Index:

| 1.  |  | 4  |
|---|--|--|
| 2.  | EXECUTIVE SUMMARY  |  |
| 2.1   | eu-DOMAIN aims and objectives  |  |
| 2.2   | Project participants   |  |
| 2.3   | Progress to date   | 8  |
| 3.  | PROJECT OBJECTIVES AND ACHIEVEMENTS FOR REPORTING PERIO                              |  |
| 3.1   | Main achievements summary  |  |
| 3.2   | Progress in implementation of the 'Description of Work' / Problems encountered       |  |
| 3.3   | Objectives achievement   | 9  |
|   |  |  |
| 4.  | WORKPACKAGE PROGRESS OF THE PERIOD   | 11   |
| <b>4.</b><br>4.1                                    | WORKPACKAGE PROGRESS OF THE PERIOD   |  |
|   |  | 11   |
| 4.1   | Work progress<br>Milestones<br>Deliverables  | 11<br>12<br>13                                     |
| 4.1<br>4.2  | Work progress<br>Milestones<br>Deliverables<br>Deviations from Plan                  | 11<br>12<br>13<br>16                               |
| 4.1<br>4.2<br>4.3                                   | Work progress<br>Milestones<br>Deliverables  | 11<br>12<br>13<br>16                               |
| 4.1<br>4.2<br>4.3<br>4.4<br>4.5                     | Work progress<br>Milestones<br>Deliverables<br>Deviations from Plan                  | 11<br>12<br>13<br>16<br>16                         |
| 4.1<br>4.2<br>4.3<br>4.4<br>4.5                     | Work progress<br>Milestones<br>Deliverables<br>Deviations from Plan<br>Dissemination | 11<br>12<br>13<br>16<br>16<br>16                   |
| 4.1<br>4.2<br>4.3<br>4.4<br>4.5<br><b>5.</b>        | Work progress<br>Milestones<br>Deliverables<br>Deviations from Plan<br>Dissemination | 11<br>12<br>13<br>16<br>16<br>16                   |
| 4.1<br>4.2<br>4.3<br>4.4<br>4.5<br><b>5.</b><br>5.1 | Work progress<br>Milestones<br>Deliverables<br>Deviations from Plan<br>Dissemination | 11<br>12<br>13<br>16<br>16<br>18<br>18<br>18<br>19 |

# 1. Introduction

This report is the eu-DOMAIN activity report for the project's third formal reporting period, Period 3: 1<sup>st</sup> June 2006 to 31<sup>st</sup> May 2007. It should be read in conjunction with the corresponding eu-DOMAIN D.1.2.3 Management Report for the same period. For clarity some information is duplicated in both reports.

This activity report encompasses a publishable executive summary, the project's progress against its objectives, workplan and management aims.

## 2. Executive summary

#### 2.1 eu-DOMAIN aims and objectives

The aim of the eu-DOMAIN project is to develop a new, innovative European ambient intelligence service platform which will interconnect people, devices, buildings and content in an interoperable network and open up entirely new ways of working in collaborative work environments.

An estimated 12 million Europeans travel everyday across Europe working outside their normal workspace. eu-DOMAIN will dramatically improve their ability to deliver quality services, increase the competitiveness and visibility of their host organisations and generally improve the quality of life for Europe's citizens.

#### European impact

<u>Strategic impact</u>: eu-DOMAIN places European companies at the forefront of ambient intelligent technologies *providing potential to significantly increase the competitiveness of European businesses.* It provides SMEs with an easy-to-deploy strategic platform allowing them to drastically improve time-to-market of their products by simply renting access to the platform from service providers.

<u>Economic impact</u>: eu-DOMAIN integrates a number of emerging technologies in an infrastructure and set of applications and services. The scenarios being validated are in the *e*Business and *e*Health domains but the results will have wider applicability in many other domains. A platform that improves the efficiency and effectiveness of a market of this size must by definition have a major impact at the European level. Citizen users will similarly realise both economic and social benefits as a result of their more efficient and effective interaction with all types of organisation using eu-DOMAIN.

<u>Business innovation</u>: An integral part of the project is the analysis and development of realistic business models for users and service providers. *New research into defining and measuring value creation in web service networks will lead to innovative business structures involving content providers and service providers in collaborative systems.* Specific emphasis will be made on identifying new business opportunities for SMEs. Governments, especially in the healthcare and social services area, will be provided with a platform for delivering public services directly to the citizens' homes with enormous potential for improving quality and reducing costs.

#### **Results exploitation**

The intention is to establish eu-DOMAIN as a new joint-venture stand-alone business available to potential users throughout Europe initially, and then potentially worldwide. *It is expected that the joint venture will cover sufficient technological ground to be able to offer and operate a complete Europe-wide eu-DOMAIN platform*.

In addition to participation in the joint venture, the eu-DOMAIN partners will also be able to exploit the knowledge gained from participation to improve their consultancy services and/or research activities to all types of private and public sector organisations who are interested in exploiting emerging technologies to implement new and better ways of working.

#### Validation scenarios

Two innovative user scenarios have been defined to demonstrate the systems potential: In the field of *industrial pumps* the focus is '*Serving your every need*!': Combined with eu-DOMAIN, the basic product function of a pump will shift from simply moving water (or fluids) to be an integral, maybe even a crucial part, of the customer's solution. The pumps are "serving"

you - wherever you are - whatever you do - whenever you want it".

In the field of *Healthcare* the focus is '*Patients as customers':* A variety of new methods, devices and medication are available from various service providers, each of them offering their services to an informed patient - sometimes in competition; sometimes in cooperation. The patient chooses the providers that are most suited to their needs supported by eu-DOMAIN technology.

#### Approach

eu-Domain will realise its vision by developing a working example of 'Ambient Intelligence' infrastructure, combining state-of-the-art communications, decision support, semantic web and location-based technologies.

It will pave the way for its commercial deployment through the development of realistic business models for users and service providers.

The project's work is divided into five phases covering:

- Project coordination processes
- Research and development,
- Prototyping and system integration
- User testing and uptake
- Dissemination and exploitation.

#### **Technology innovation**

The main technological innovation in eu-DOMAIN lies in its 3-tier hierarchical client-server structure with multilevel distributed, configurable intelligence pools. This structure supports the wealth of different applications, which can be integrated into the Europe-wide ambient intelligence service network.

Another very innovative feature is self-configuring devices that use semantic agents to search for configuration set-up, protocols and user interfaces. Application specific intelligence pools perform intelligent adaptation and user set-up, tailored to the users precise needs in the actual real-world situation.

A further innovative feature of eu-DOMAIN is the web based service-provisioning platform, which allows any service provider (industrial, healthcare, government, etc.) to deliver web services to people and devices in any location across Europe.

#### 2.2 **Project participants**

The eu-DOMAIN consortium has an excellent insight into the state of the art in this field. It encompasses highly skilled organisations with a wealth of experience necessary to the project's management, technical and business requirements. The consortium is:

- Functionally comprehensive with a very full and sound balance between user, technical and managerial expertise with clear and relevant roles established for each consortium partner; and;
- Skilled and experienced in the projects business and technical requirements with the projects requirements for user input well covered across the focus sectors of Building Facility Management and eHealth Services.

It is nationally and culturally diverse with partners from 6 European countries who conduct their business across Europe and beyond, providing a clear understanding of the dynamic business, sociological and cultural characteristics of its potential market place. The consortium partners are:

#### **Contractors:**

| Participant  | Role                    | Country           | Expertise   |  |
|--|-------------------------|-------------------|---|--|
| C International Ltd<br>(CIL)                                   | Coordinating<br>Partner | United<br>Kingdom | Extensive experience of managing IST and other multi-partner project:<br>Substantial prior involvement in testing implementation and evaluation<br>activities and substantial experience in business modelling.                 |  |
| Innova S.p.A.<br>(INNOVA <b>)</b>                              | Partner                 | Italy             | Long experience in bringing new technology to SMEs.<br>Experience in conduction European Awareness Scenario Workshops<br>(EASW) and substantial knowledge of Socio-economic issues in relation<br>to technology deployment.     |  |
| In-JeT ApS<br>(IN-JET)   | Partner                 | Denmark           | Considerable knowledge on frameworks for ambient intelligence and web services. Also in business modelling and building business cases.   |  |
| University of Aarhus,<br>Dept of Computer<br>Science<br>(UAAR) | Partner                 | Denmark           | Substantial scientific knowledge of software architectures and system<br>analysis. Experience in gateway technology and OSGi frameworks and<br>substantial scientific knowledge of trust and security analysis.                 |  |
| FORTH<br>(FORTH)   | Partner                 | Greece<br>(Crete) | Expertise in all aspects of system design for healthcare.<br>Substantial expertise in <i>e</i> Health devices and extensive expertise in EPR<br>and ICRS systems.   |  |
| CNet Svenska AB<br>(CNET)                                      | Partner                 | Sweden            | Extensive experience in XML based content and web service application development. Substantial knowledge in web-based meta data creation for the construction industry.   |  |
|  |                         |                   | Experience in interactive environments for geographically distributed organisations.  |  |
| T-connect S.r.l.<br>(T-CON)                                    | Partner                 | Italy             | Experience in wireless broadband technologies.<br>Substantial knowledge of deliveries of personalised services via wireless<br>networks.  |  |
| Software AG<br>(SAG)   | Partner                 | Belgium           | Leading vendor of XML technology and solutions. Substantial experience in web services and content management. Comprehensive experience in mobile computing.  |  |
| Telefónica I+D<br>(TID)  | Partner                 | Spain             | Substantial experience in intelligent network and services creation on broadband. Comprehensive skills in artificial intelligence and software engineering. Experiences in real time systems and databases and knowledge bases. |  |
| Grundfos<br>(GMA)  | User                    | Denmark           | Grundfos is one of the world's leading pump manufacturers and has<br>decades of know-how about pumps and pump systems and is a typical<br>case of a European Service Network user.  |  |
| Eastern Birmingham<br>Primary Care Trust<br>(EBPCT)            | User                    | United<br>Kingdom | The PCT has extensive experience in commissioning hospital services<br>as well as providing community services and running emergency<br>services and is a typical case of a Healthcare for tomorrow user                        |  |

#### Additional supporting participants:

CONTRIBUTOR - ALEXANDRA INSTITUTE, Denmark; SUBCONTRACTOR - ACIT GMBH, Germany; SUBCONTRACTOR – LIWAS APS, Denmark.

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#### 2.3 Progress to date

As the eu-Domain project completes its third, and final, formal reporting period covering June 2006 through to May 2007, the project has achieved its set objectives and is currently on schedule to complete its activities to plan.

The project has seen sound progress during the period with:

- The completed integration of the eu-DOMAIN client and server software.
- The eu-DOMAIN communications infrastructure in place.
- The technical and functional testing of the overall platform completed in the context of the ESN and Healthcare scenarios.
- The validation of both the ESN and Healthcare scenarios
- The dissemination and use plan updated and the already established dissemination programme intensified, with an enhanced project website.
- A completed project evaluation and assessment.

The project has progressed under its sound organisational framework with each and every consortium partner playing a significant role in the project and deploying their skills and experience to maximum effect.

The project was completed on 14<sup>th</sup> June 2007.

# 3. Project objectives and achievements for reporting period

#### 3.1 Main achievements summary

This third formal reporting period (twelfth quarterly reporting period) for months 25 to 36 of the eu-DOMAIN project has seen good progress being made with the set objectives for the period being achieved. This final 12 months of the project has seen:

- Completion of the communications infrastructure set up
- Success in achievement of systems integration goals
- Validation of both ESN and Healthcare tomorrow based on two scenarios
- Updated dissemination and use plan
- Final project evaluation and assessment

Final project completion was achieved on 14<sup>th</sup> June 2007

#### 3.2 Progress in implementation of the 'Description of Work' / Problems encountered

The project's workplan has progressed largely as intended. The delay in business modelling activities reported at the close of period 2 filtered through into period 3, where as a result of difficulties in obtaining participation in the healthcare validation workshop, a decision was taken to add a further workshop into the programme. The need to sustain high levels of user involvement had an impact on the timescales for workpackages 7 and 8. The delays encountered have not impacted on the final completion of the project.

#### 3.3 **Objectives achievement**

eu-DOMAIN has achieved its aimed objectives for this reporting period with progress against these as follows:

| Objectives  | Progress towards achieving objectives  |
|---|--|
| Progress the project's<br>operational project<br>management | <ul> <li>The project has progressed under its sound managerial framework.<br/>Each and every project partner has played their full role in the<br/>project, with completion to final project dates</li> </ul>  |
| Complete set up of<br>communications<br>infrastructure      | The completion of the network set up was due this period   |
| Develop business<br>models for eu-DOMAIN<br>deployment      | <ul> <li>Work has progressed on summarising validated business models.<br/>With difficulties experienced with gaining participation in the<br/>healthcare validation, a decision was made to hold a third workshop<br/>(not in DoW), in Italy in August</li> </ul> |
| Continue systems integration                                | • Concentrated work has been underway here, with technical testing, testing and user scenarios and preparation of validation plans   |

| Testing and validation   | Completed validation in two domains and demonstrator for final review  |
|--|--|
| <ul> <li>Progress the project's<br/>dissemination<br/>framework</li> </ul> | <ul> <li>Dissemination activities have been continued by the partners in line<br/>with the project's Dissemination and Use Plan</li> </ul> |
| Continue ongoing and<br>final project review                               | <ul> <li>Ongoing assessment and evaluation of the project's performance has<br/>continued and final assessment completed</li> </ul>        |

# 4. Workpackage progress of the period

#### 4.1 Work progress

The project's workplan has progressed broadly as intended with the scheduled tasks and deliverables completed to plan. There have been no issues or unexpected problems that have impacted the project's work schedule or its related costs or quality.

An updated project Gantt chart illustrating current progress is provided in Section 5.

| Work Package  | Activity status  |  |  |  |  |  |
|---|--|--|--|--|--|--|
| WP1 Project Management  |  |  |  |  |  |  |
| T1.2 Operational Project<br>Management and T1.3<br>Project reporting  |  |  |  |  |  |  |
| WP5 Communication infra   | astructure   |  |  |  |  |  |
| T5.1 and T5.2 Set up<br>communications<br>network   | Communications network set up complete.  |  |  |  |  |  |
| WP6 Socio-economic issu   | es   |  |  |  |  |  |
| T6.1 Business modelling   | Validated business models and business cases - was completed in<br>September, with a revised business case prepared as a result of the<br>recommendations of the second annual review.   |  |  |  |  |  |
| T6.2 European<br>awareness scenario<br>w/shops  | EASW public reports complete.  |  |  |  |  |  |
| WP7 System integration  |  |  |  |  |  |  |
| T7.1 Integration of systems components  | Extensive work on defining and achieving integration goals for the demonstrator to be ready for the annual review.   |  |  |  |  |  |
| T7.3 Testing and user scenarios   | Formulation of scenario components for demonstrator 3, Liferay portal server installation and tested.  |  |  |  |  |  |
| T7.4 Validation plans During the 2nd review meeting and in the next months some criteria appropriate methods for user testing have been suggested, taking in account that the users have to be involved strongly in the validation A user-centred approach has been applied, indeed, throughout the eproject. |  |  |  |  |  |  |
| WP8 Testing and validatio   | n  |  |  |  |  |  |
| T8.1 Validation of ESN  | A validation scenario has been developed with GMA, and implemented.  |  |  |  |  |  |
| T8.2 Validation of<br>Healthcare tomorrow   | A validation scenario has been developed with EBPCT, and implemented.  |  |  |  |  |  |
| T8.3 Preparation for exploitation and take-up   | Demonstrator platform for 3 <sup>rd</sup> annual review completed. A revised business case is included in D8.2 and definitions of responsibilities between eu-<br>DOMAIN and service providers ICT systems included in D8.4. Completion of D8.3. |  |  |  |  |  |
| WP9 Dissemination & exploitation  |  |  |  |  |  |  |

| T9.1 Dissemination  | Ongoing enrichment of website. Final plan for using dissemination knowledge issued. |  |  |  |
|---|---|--|--|--|
| T9.2 Exploitation   | Final exploitation plans complete.  |  |  |  |
| WP10 Review and assessment  |   |  |  |  |
| T10.1 and T10.2 On-<br>going project review and<br>final assessment | Evaluation of work against the set objectives of the project.                       |  |  |  |

### 4.2 Milestones

The project's target milestones for this reporting period have been attained and are shown in the following table:

| Milestone   | Planned<br>month | Actual<br>month | Comments   |
|---|------------------|-----------------|--|
| M1.1 Acceptance of the consortium agreement by all partners.  | 1                | 3               |  |
| M1.2 PID produced for kick off meeting.   | 2                | 1               | Project successfully initiated –<br>kick-off meeting 21 <sup>st</sup> & 22 <sup>nd</sup> June<br>2004. |
| M1.3 Timely issuance of a Quality Manual to be used in all parts of the project and in all project material.  | 3                | 3               |  |
| M1.4 Timeliness of the planned reviews.   | From 5           |                 | Expected to be attained to schedule  |
| M1.5 Final project report produced.   | 36               | 36              | Expected to be attained to schedule  |
| M2.1 Scenarios identifying key technological, socio-economic and business drivers for future technological development have been established and show no adverse impact on the overall concept of the eu-DOMAIN infrastructure. | 3                | 4               | Eight scenarios developed and<br>two identified for<br>implementation and validation.                  |
| M2.2 The comprehensive set of user<br>requirements specifications based on<br>users behaviours and simulated<br>interaction infrastructure ensuring its<br>market exploitation and social<br>acceptance                         | 6                | 6               | Specifications successfully<br>derived. Social acceptance to be<br>included in validation work.        |
| M3.1 Software architecture is defined in UML with no major points of conflict with user requirements.   | 9                | 9               | Architecture defined. To be validated in first demonstrator.   |
| M3.2 OSGi framework is operational with testing bundles   | 18               | 18              | OSGi Framework completed.  |
| M3.3 Entire client side infrastructure is operational and can be integrated with the  | 21               | 21              | Completed on schedule  |

| server side structure.   |    |    |  |
|--|----|----|--|
| M41 Software architecture is defined in UML with no major points of conflict with user requirements.                     | 9  | 9  | Architecture defined. To be validated in first demonstrator. |
| M4.2 Entire server side infrastructure is operational and can be integrated with the client side structure.              | 20 | 20 | Completed on schedule  |
| M5.1 System architecture approved.   | 18 | 18 | Completed on schedule  |
| M5.2 Network access approved.  | 18 | 18 | Completed on schedule  |
| M5.3 Entire communication infrastructure is operational and can be integrated with the server and client side structure. | 26 |    |  |
| M6.1 Successful business cases for each of the two user scenarios.   | 15 | 22 | Delayed but complete   |
| M6.2 Successful organisation of European<br>Awareness Scenario Workshops with at least<br>15 participants in each event. | 21 | 21 |  |
| M7.1 Infrastructure testing successful   | 28 |    |  |
| M7.2 Testing and population of user cases successful   | 31 |    |  |
| M8.1 User acceptance of the two user cases   | 35 |    |  |
| M8.2 At least two potential new users from different domains have emerged and are planning new tests.                    | 35 |    |  |
| M9.1 Project presentation completed.   | 3  | 2  |  |
| M9.2 Inaugural conference held   | 2  | 1  |  |
| M9.3 Plan for disseminating and using knowledge.   | 6  | 6  |  |
| M9.4 Final plan for disseminating and using knowledge  | 35 | 36 |  |
| M10.1 Draft evaluation updated at completion of each workpackage.  |    | 36 |  |
| M10.2 Project fully evaluated  | 36 | 36 |  |

#### 4.3 Deliverables

The scheduled deliverables for this reporting period have been completed and are shown below.

|      | Deliverable          | Planned<br>month | Completed<br>month | Comments   |
|------|----------------------|------------------|--------------------|--|
| D1.1 | Project Quality Plan | 1                | 3                  | Delivered with progress report QMR1 for first reporting period |

| D1.2  | Doriodic activity   | 12.24.27  | 12,24.2/  |  |
|-------|---|-----------|-----------|--|
| DT.2  | Periodic activity,<br>management and financial<br>reports                                   | 12+24+36  | 12+24+36  |  |
| D1.3  | Quarterly progress reports for the commission   | 3 thru 33 | 3 thru 33 |  |
| D1.4  | Final project report -<br>activity, management and<br>financial (draft & final<br>versions) | 35 & 36   | 36        |  |
| D2.1  | User validation framework<br>plan   | 3         | 4         | Delivered with progress report QMR1 for first reporting period   |
| D2.2  | State of the Art analysis   | 4         | 4         | Delivered with progress report QMR1 for first reporting period   |
| D2.3  | Functional user requirements specifications   | 6         | 6         | Delivered with progress report QMR2 for second reporting period  |
| D2.4  | Trust and security user requirements specifications   | 6         | 6         | Delivered with progress report QMR2 for second reporting period  |
| D2.4A | Annex to trust and security requirements  | 18        | 18        | Recommended by first annual review report. Delivered with progress report QMR6.  |
| D2.5  | Societal user requirements specifications.  | 6         | 6         | Delivered with progress report QMR2 for second reporting period  |
| D2.5A | Annex to societal requirements  | 18        | 18        | Recommended by first annual review report. Delivered with progress report QMR6.  |
| D2.6  | Workflow procedures and potential for innovation  | 6         | 9         | Delivered with progress report QMR3<br>for third reporting period (months 6<br>– 9)                                      |
| D3.1  | Client side architecture specification  | 9         | 9         | Delivered as combined deliverable<br>with D4.1 with progress report QMR3<br>for third reporting period (months 6<br>– 9) |
| D3.2  | Gateway OSGi framework and device communication   | 18        | 18        | Delivered with progress report QMR6.   |
| D3.3  | Design guides and<br>navigation for device<br>interaction                                   | 21        | 21        | Delivered to schedule  |
| D4.1  | Server side architecture specification  | 9         | 9         | Delivered as combined deliverable<br>with D3.1 with progress report QMR3<br>for third reporting period (months 6<br>– 9) |
| D4.2  | Design Guidelines for user interfaces   | 9         | 9         | Delivered with progress report QMR3<br>for third reporting period (months 6<br>– 9)                                      |
|       |   |           |           |  |

| D4.3 | Network intelligence,<br>database and user<br>interfaces                          | 20        |    | Delivered to schedule   |
|------|---|-----------|----|---|
| D4.4 | Application intelligence and web service provisioning                             | 22        |    | Delivered to schedule   |
| D5.1 | Communication architecture description  | 21        |    | Delivered to schedule   |
| D5.2 | Prototype of communication infrastructure   | 26        | 36 | Some delay. Report awaited  |
| D6.1 | Proposed business models and business cases                                       | 15        |    | Delayed but complete  |
| D6.2 | Organised European<br>Awareness Scenario<br>Workshops                             | 22        |    | Complete  |
| D6.3 | Public reports from the<br>EASW Workshops   | 22        |    | Complete  |
| D6.4 | Validated business models and business cases                                      | 22        | 28 | Completed September 2006  |
| D7.1 | Test report of prototype platform   | 31        | 36 | Some delay  |
| D7.2 | Testing platform for validation   | 31        | 36 | Some delay  |
| D7.3 | User validation plan for eu-<br>DOMAIN  | 31        | 34 | Some delay  |
| D8.1 | Validation report: The<br>European Service Network                                | 35        | 36 | Some delay  |
| D8.2 | Validation report:<br>Healthcare for tomorrow                                     | 35        | 36 | Some delay  |
| D8.3 | Evaluated platform for take-<br>up activities                                     | 35        | 36 | Some delay  |
| D8.4 | Take-up guideline and technology watch report                                     | 35        | 36 | Some delay  |
| D9.1 | Project presentation  | 2         | 3  | Delivered with progress report for<br>first reporting period  |
| D9.2 | Project website   | 2         | 2  | www.eu-domain.eu.com  |
| D9.3 | Plan for using and<br>disseminating knowledge<br>(drafts at 6 month<br>intervals) | 6 thru 32 | 36 | Versions delivered with progress<br>report QMR2, QMR4 and QMR6.<br>Further version delivered at close of<br>project |
| D9.4 | Final plan for using and disseminating knowledge                                  | 35        | 36 | Slight delay  |
| D9.5 | Raising public awareness report   | 35        |    | To merge with D9.4  |

| D9.6  | Exploitation plans (Draft and final) | 16 and 34 | 36 | The first draft was finished 17 August<br>2005 (M15) and an exploitation team<br>formed.<br>The preliminary version was<br>completed on 2 June 2006. |
|-------|--------------------------------------|-----------|----|--|
| D10.1 | Evaluation & assessment report       | 12+24+35  | 36 | Complete   |

#### 4.4 Deviations from Plan

There are no deviations from plan that affect the projects objectives, completion date or resources.

As stated above, the delay in business modelling activities reported at the close of period 2 filtered through into period 3, where as a result of difficulties in obtaining participation in the healthcare validation workshop, a decision was taken to add a further workshop into the programme. The need to sustain high levels of user involvement had an impact on the timescales for workpackages 7 and 8. These delays have been managed within the overall timeframes of the project.

#### 4.5 Dissemination

eu-DOMAIN has followed its schedule for third year dissemination and has completed dissemination activity as planned:

- The project's dissemination and use plans have been updated and implemented as a series of dissemination activities
- A project 'Flyer' has continued to be used to publicise eu-DOMAIN
- The project website has continued to be operational and a dissemination contact list put in place.
- A range of presentations have been made at a variety of workshops and other events pertinent to the ambient intelligence research, industrial and healthcare arenas
- Peer contacts have been instigated with a number of projects and organisations in order to explore clustering possibilities
- Articles for peer-reviewed scientific journals are being prepared for publications in the coming reporting period

| Date         | Title  | Description  |
|--------------|--|--|
| 14 June 2006 | Conference on<br>Denmark's mobile and<br>wireless future | Technological council reporting on future technologies including mobile healthcare solutions |

The following table illustrates some of the above activities:

| Date                     | Title   | Description   |
|--------------------------|---|---|
| 16 June 2006             | Danish Federation of<br>Industries  | Presentation of eu-DOMAIN to leading<br>companies in the field of mobile<br>technologies  |
| 26-27 June 2006          | The Fifth International<br>Conference on<br>m>Business                                      | A paper was presented at this event. The topic of the paper is value modelling in industrial markets  |
| 6 September 2006         | Danish National FP7<br>kick-off meeting   | 1100 persons attended. IN-JET invited to give a presentation of experiences from Fp6 including eu-DOMAIN  |
| 23 October 2006          | Presentation at clinical<br>workshop organised by<br>Danish Federation of<br>Industries     | High level workshop on future and<br>emerging technologies for health care. IN-<br>JET presented the eu-DOMAIN platform   |
| 26-28 October 2006       | Paper published in the<br>proceedings of the ITAB<br>2006 conference<br>(sponsored by IEEE) | The title of the paper is "Ambient<br>Intelligence Support for Tomorrow's Health<br>Care: Scenario Based Requirements and<br>Architectural Specifications of the eu-<br>DOMAIN Platform"<br>Authors: F. Chiarugi, G. Zacharioudakis, M.<br>Tsiknakis, J. Thestrup, K.M. Hansen, P.<br>Antolin, J. Camara Melgosa, P. Rosengren,<br>J. Meadows |
| 21 – 23 November<br>2006 | IST 23006 in Helsinki   | Participation in the bi-annual IST 2006 conference in Helsinki  |
| 13 December 2006         | CSI Wireless Theme Day  | 50, presentation UAAR   |
| 19 February 2007         | IST course on EU projects   | 36 attendees from academia and industry in Denmark  |
| 26 February 2007         | Innovation workshop at<br>Danish Federation of<br>Industries                                | 10 attendees seeking collaborative innovation projects  |
| 1 March 2007             | Aarhus Trade Council meeting  | Presentation of eu-DOMAIN as platform for ICT and the Aging projects  |
| 20 March 2007            | SISU Event  | A seminar for 60 experts on semantic<br>technology will be organised in Stockholm<br>for former employees of Swedish Institute<br>of Systems Development. The work and<br>outcome of EU-Domain will be presented<br>and discussed during the seminar  |

# 5. Consortium management

#### 5.1 Contractual

No contractual issues have arisen during the course of the third reporting period.

#### 5.2 Coordination and work schedule

It can be seen from Section 3 of this report that good progress has been made against the project's workplan and towards achieving the projects aims and objectives. An updated project GANTT chart showing current progress is shown under 5.5 below.

The project deliverables due in the third reporting period have been completed and the resource usage and costs incurred are running in line with the project schedule and activities undertaken. Project resource usage is shown under 5.3 below.

The project partners have worked closely together and supported each other in a highly professional and committed manner. Excellent liaison between the project partners and wider audience has been maintained throughout the past 12 months and a number of project meetings and workshops have been held, including:

| Title                                    | Data and Place                 | Main conclusions  |
|--|--------------------------------|---|
| Coordination meeting                     | 5 June 2006, Aarhus            | Integration planning  |
| Validation Workshop<br>(healthcare)      | 23 August 2006, Palmanova      | Validated healthcare scenario in Italy  |
| Technical meeting                        | 5-8 September 2006, Madrid     |   |
| Technical meeting                        | 4-5 September 2006, Madrid     | The integration of demonstrator 2 progressing well and remaining task was assigned                |
| Technical meeting                        | 27-28 September 2006, Madrid   | Preparation for the 2 <sup>nd</sup> annual review meeting   |
| 2 <sup>nd</sup> Annual Review<br>Meeting | 29 September 2006, Madrid      | Review successfully undertaken  |
| Board and Technical meeting              | 18 December 2006, London       | The integration of demonstrator 3 was discussed and tasks were assigned                           |
| Integration Workshop                     | 8 – 9 February 2007, Bruxelles | Walk-through of demonstrator 3 and remaining task assigned. Discussion of ESN validation scenario |
| Board and Technical meeting              | 1 April 2007, Trieste          | Preparation for the 3 <sup>rd</sup> annual review meeting   |
| Technical meeting                        | 3-4 April 2007, Trieste        | Discussion and development of ESN/PAC validation software   |
| Final Review meeting                     | 14-18 May 2007, Valladolid     |   |

# 5.3 Project Effort

The following table shows resource usage for each partner during this reporting period, to 31<sup>st</sup> May 2007.

|  |      |      |      | RTD / Ir | nnovatio | n     |       |       |       | Manage | Total  |
|--|------|------|------|----------|----------|-------|-------|-------|-------|--------|--------|
| Contractor                             | WP2  | WP3  | WP4  | WP5      | WP6      | WP7   | WP8   | WP9   | WP10  | WP1    |        |
|  | А    | А    | А    | Α        | Α        | Α     | Α     | Α     | Α     | Α      | А      |
| C International                        | 0.00 | 0.00 | 0.00 | 0.00     | 0.00     | 6.30  | 2.60  | 5.10  | 2.60  | 5.20   | 21.80  |
| Innova S.p.A.                          | 0.00 | 0.00 | 0.00 | 0.00     | 3.50     | 3.70  | 0.00  | 0.00  | 1.10  | 0.20   | 8.50   |
|  | 0.00 | 0.00 | 0.00 | 0.00     | 0.00     | 0.00  | 0.00  | 0.00  | 0.00  | 0.00   | 0.00   |
| In-Jet ApS                             | 0.00 | 0.00 | 0.20 | 0.00     | 0.70     | 1.20  | 4.50  | 3.90  | 0.00  | 1.30   | 11.80  |
| University of Aarhus                   | 0.00 | 0.00 | 0.00 | 7.00     | 0.00     | 12.00 | 12.00 | 0.50  | 0.00  | 0.00   | 31.50  |
| Foundation for research and technology | 0.00 | 0.00 | 0.00 | 0.73     | 0.24     | 4.10  | 5.30  | 2.46  | 4.96  | 0.32   | 18.11  |
| CNet Swenska                           | 0.00 | 0.00 | 0.00 | 0.00     | 0.00     | 8.59  | 6.48  | 0.60  | 1.41  | 1.62   | 18.70  |
| T-Connect S.r.I.                       | 0.00 | 0.00 | 0.00 | 0.00     | 0.00     | 12.92 | 0.82  | 0.00  | 0.00  | 0.00   | 13.74  |
| Software AG                            | 0.00 | 0.00 | 0.10 | 0.00     | 0.00     | 2.29  | 0.85  | 0.00  | 0.40  | 0.30   | 3.94   |
| Telefonica I+D                         | 0.00 | 0.00 | 0.00 | 0.29     | 0.00     | 9.05  | 2.00  | 0.90  | 0.26  | 3.30   | 15.80  |
| Grundfos Management A/S                | 0.00 | 0.00 | 0.00 | 0.00     | 0.00     | 0.00  | 0.00  | 0.00  | 0.00  | 0.00   | 0.00   |
| East Birmingham PCT                    | 0.00 | 0.00 | 0.00 | 0.00     | 0.00     | 5.30  | 9.30  | 2.20  | 0.10  | 0.00   | 16.90  |
| Total                                  | 0.00 | 0.00 | 0.30 | 8.02     | 4.44     | 65.45 | 43.85 | 15.66 | 10.83 | 12.24  | 160.79 |

Cumulative effort for the project to completion are as follows:

|  |       |       |       |            |       |       |       | R     | TD / Inr | iovatio | n     |       |       |       |       |            |       |       | Manag | ement | Tot    | al     |
|--|-------|-------|-------|------------|-------|-------|-------|-------|----------|---------|-------|-------|-------|-------|-------|------------|-------|-------|-------|-------|--------|--------|
| Contractor                             | w     | P2    | WF    | <b>5</b> 3 | W     | P4    | w     | P5    | w        | P6      | w     | P7    | w     | P8    | W     | <b>5</b> 9 | WF    | P10   | w     | P1    |        |        |
| Q12                                    | Α     | Р     | Α     | Р          | Α     | Р     | Α     | Р     | Α        | Р       | Α     | Р     | A P   |       | Α     | Р          | Α     | Р     | Α     | Р     | А      | Р      |
| C International                        | 2.60  | 2.00  | 0.00  | 0.00       | 0.00  | 0.00  | 0.00  | 0.00  | 3.15     | 2.20    | 6.30  | 3.50  | 2.60  | 1.60  | 8.80  | 6.50       | 5.80  | 4.00  | 19.55 | 20.20 | 48.80  | 40.00  |
| Innova S.p.A.                          | 22.90 | 13.00 | 0.00  | 0.00       | 0.00  | 0.00  | 0.00  | 0.00  | 14.90    | 12.50   | 3.50  | 3.00  | 12.00 | 9.10  | 3.00  | 3.00       | 2.00  | 2.00  | 0.40  | 0.40  | 58.70  | 43.00  |
| In-Jet ApS                             | 5.80  | 5.00  | 0.90  | 0.40       | 3.40  | 4.00  | 0.50  | 2.50  | 10.60    | 5.00    | 1.50  | 1.20  | 5.60  | 9.30  | 8.00  | 3.70       | 0.20  | 3.50  | 4.70  | 7.70  | 41.20  | 42.30  |
| University of Aarhus                   | 6.49  | 5.00  | 16.43 | 25.20      | 7.79  | 7.00  | 7.00  | 0.00  | 0.00     | 0.40    | 12.00 | 9.00  | 12.00 | 1.10  | 0.50  | 3.40       | 0.20  | 2.20  | 0.52  | 1.90  | 62.93  | 55.20  |
| Foundation for research and technology | 0.50  | 4.00  | 22.20 | 15.50      | 12.00 | 11.25 | 11.73 | 10.00 | 0.51     | 0.50    | 8.35  | 7.30  | 6.30  | 2.00  | 3.36  | 2.50       | 5.75  | 2.30  | 0.48  | 0.40  | 71.18  | 55.75  |
| CNet Swenska                           | 5.70  | 0.90  | 1.10  | 1.00       | 28.50 | 25.60 | 0.30  | 4.00  | 0.60     | 0.40    | 8.50  | 15.20 | 7.70  | 1.90  | 2.40  | 3.00       | 2.50  | 2.80  | 5.40  | 0.10  | 62.70  | 54.90  |
| T-Connect S.r.I.                       | 1.38  | 0.00  | 8.90  | 6.00       | 10.14 | 6.00  | 3.15  | 11.00 | 0.00     | 0.00    | 10.87 | 6.00  | 14.58 | 0.80  | 3.60  | 1.10       | 0.15  | 0.33  | 0.95  | 0.43  | 53.72  | 31.66  |
| Software AG                            | 0.00  | 0.00  | 0.00  | 0.00       | 13.50 | 13.50 | 0.00  | 0.00  | 0.00     | 0.00    | 3.00  | 3.00  | 1.16  | 1.20  | 0.00  | 0.00       | 1.11  | 1.50  | 0.48  | 0.30  | 19.25  | 19.50  |
| Telefonica I+D                         | 2.92  | 0.00  | 10.82 | 5.00       | 11.76 | 7.60  | 17.99 | 20.00 | 1.20     | 0.40    | 9.05  | 17.00 | 3.30  | 2.00  | 1.35  | 3.10       | 0.56  | 3.50  | 3.42  | 3.90  | 62.37  | 62.50  |
| Grundfos Management A/S                | 2.38  | 4.00  | 2.00  | 0.00       | 0.00  | 0.00  | 0.00  | 0.00  | 0.64     | 0.90    | 0.00  | 3.00  | 0.30  | 7.20  | 0.45  | 2.00       | 0.22  | 0.70  | 0.20  | 0.20  | 6.19   | 18.00  |
| East Birmingham PCT                    | 2.83  | 4.00  | 0.60  | 0.00       | 0.00  | 0.00  | 0.00  | 0.00  | 0.24     | 0.90    | 5.30  | 3.00  | 10.10 | 7.20  | 3.05  | 2.00       | 0.32  | 0.10  | 0.19  | 0.20  | 22.63  | 17.40  |
| Total                                  | 53.50 | 37.90 | 62.95 | 53.10      | 87.09 | 74.95 | 40.67 | 47.50 | 31.84    | 23.20   | 68.37 | 71.20 | 75.64 | 43.40 | 34.51 | 30.30      | 18.81 | 22.93 | 36.29 | 35.73 | 509.67 | 440.21 |

### 5.4 Progress against workplan

The following table shows progress against the project's activity workplan as at 31<sup>st</sup> May 2007:

|      | Year/Quarter                            |         |            | 1/1 |   | 1/: | 2 |   | 1/3 |   |   | 1/4 |   | 2 | 2/1 |   | 2 | 2/2   |   | 2/3 |   |   | 2/4 |   | 3 | 3/1 |   |   | 3/2 |   |   | 3/3 |   | : | 3/4 |
|------|---|---------|------------|-----|---|-----|---|---|-----|---|---|-----|---|---|-----|---|---|-------|---|-----|---|---|-----|---|---|-----|---|---|-----|---|---|-----|---|---|-----|
|      | Month                                   |         | 1          | 2 3 | 3 | 1 2 | 3 | 1 | 2   | 3 | 1 | 2   | 3 | 1 | 2 3 | 3 | 1 | 2 3   | 1 | 2   | 3 | 1 | 2   | 3 | 1 | 2   | 3 | 1 | 2   | 3 | 1 | 2   | 3 | 1 | 2 3 |
|      | = Completed work                        |         | <b>.</b> ' | Į   |   |     | ļ |   |     | • |   |     | Ī |   |     | u |   |       | • |     |   |   | I   | • | I |     | • | I | I   | • | ļ |     | n | I |     |
|      | = Pending work                          |         | I          |     |   |     |   |   |     |   |   |     | - |   |     |   |   |       |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |
| P1   | Project management                      |         | T I        |     |   |     |   |   |     |   |   |     |   |   |     |   |   |       |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |
| T1.1 | Project initiation                      |         |            |     |   |     |   |   |     |   |   |     |   |   |     |   |   |       |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |
| T1.2 | Operational project manageme            | ent     |            |     |   |     |   |   |     |   |   |     |   |   |     |   |   |       |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |
| T1.3 | Project reporting                       |         |            |     |   |     |   |   |     |   |   |     |   |   |     |   |   |       |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |
| WP2  | User requirement specification          | ions    |            |     |   |     |   |   |     |   |   |     |   |   |     |   |   |       |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |
| T2.1 | Analyse State of the Art                |         |            |     |   |     |   |   |     |   |   |     |   |   |     |   |   |       |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |
| T2.2 | Define trust and se requirements        | ecurity |            |     |   |     |   |   |     |   |   |     |   |   |     |   |   |       |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |
| T2.3 | Workflow analysis and optimis           | sation  |            |     |   |     |   |   |     |   |   |     |   |   |     |   |   |       |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |
| WP3  | Client side architecture                |         |            |     |   |     |   |   |     |   |   |     |   |   |     |   |   |       |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |
| T3.1 | Software architecture analy design      | /sis &  |            |     |   |     |   |   |     |   |   |     |   |   |     |   |   |       |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |
| T3.2 | OSGI framework on gateways              | ;       |            |     |   |     |   |   |     |   |   |     |   |   |     |   |   |       |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |
| T3.3 | Research new devices, interac           | ctions. |            |     |   |     |   |   |     |   |   |     |   |   |     |   |   |       |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |
| WP4  | Server side architecture                | ;       |            |     |   |     |   |   |     |   |   |     |   |   |     |   |   |       |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |
| T4.1 | Software architecture analysis design   | \$ &    |            |     |   | _   | _ | - | _   | — |   |     |   |   |     |   |   |       |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |
| T4.2 | Network intelligence pool & databases   |         |            |     |   |     |   |   |     |   | _ | -   | - | _ |     | - |   | _   - |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |
| T4.3 | Application intelligence / web services | )       |            |     |   |     |   |   |     |   | _ | -   | - | _ |     | - |   |       |   | -   | _ | _ |     |   |   |     |   |   |     |   |   |     |   |   |     |
| WP5  | Communications infrastruct              | ture    |            |     |   |     |   |   |     |   |   |     |   |   |     |   |   |       |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |
| T5.1 | Set up fixed/mobile comms.<br>networks  |         |            |     |   |     |   |   |     |   |   |     |   |   |     |   |   |       |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |
| T5.2 | Set up TETRA network                    |         |            |     |   |     |   |   |     |   |   |     |   |   |     |   |   |       |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |
| WP6  | Socio-economic issues                   |         |            |     |   |     |   |   |     |   |   |     |   |   |     |   |   |       | Γ |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |
| T6.1 | Business modelling                      |         |            |     |   |     |   |   |     |   |   |     |   |   |     |   |   |       |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |

Version 1.0

## D1.2.3 Period 3 Activity Report

|       | Year/Quarter    |                                 |   | 1/1 |   | 1/2 |   |   |   | 1/3 |   |   | 1/4 |   |   | 2/1 |   |   | 2/2 |   |   | 2/3 |   |   | 2/4 |   |   | 3/1 |   |   | 3/2 |   |   | 3/3 |   |   | 3/4 |   |
|-------|-----------------|---------------------------------|---|-----|---|-----|---|---|---|-----|---|---|-----|---|---|-----|---|---|-----|---|---|-----|---|---|-----|---|---|-----|---|---|-----|---|---|-----|---|---|-----|---|
|       |                 | Month                           | 1 | 2   | 3 | 1   | 2 | 3 | 1 | 2   | 3 | 1 | 2   | 3 | 1 | 2   | 3 | 1 | 2   | 3 | 1 | 2   | 3 | 1 | 2   | 3 | 1 | 2   | 3 | 1 | 2   | 3 | 1 | 2   | 3 | 1 | 2   | 3 |
| T6.2  | Europe<br>w/sho |                                 |   |     |   |     |   |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |
| WP7   |                 | System integration              |   |     |   |     |   |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |
| T7.1  | Integr          | ation of system components      |   |     |   |     |   |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |
| T7.2  | Techn           | ical testing overall platform   |   |     |   |     |   |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |
| T7.3  | Testin          | g and user scenarios            |   |     |   |     |   |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |
| T7.4  | Valida          | tion plans                      |   |     |   |     |   |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |
| WP8   |                 | Testing and validation          |   |     |   |     |   |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |
| T8.1  | Valida          | tion of ESN                     |   |     |   |     |   |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |
| T8.2  | Valida          | tion of Healthcare tomorrow     |   |     |   |     |   |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |
| T8.3  | Prepar<br>up    | ration for exploitation & take- |   |     |   |     |   |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     | _ | — | _   |   |
| WP9   | Dissen          | nination and exploitation       |   |     |   |     |   |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |
| T9.1  | Projec          | t dissemination                 |   |     |   |     |   |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |
| T9.2  | Exploi          | tation                          |   |     |   |     |   |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |
| WP10  | Review          | w and Assessment                |   |     |   |     |   |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |
| T10.1 | On-go           | ing project review              |   |     |   |     |   |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |
| T10.2 | Final a         | assessment                      |   |     |   |     |   |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |   |     |   |