iCareNet Autumn School 2011: Context sensing, research methodology and ethics

October 24 – 28, 2011, Universität Passau, Germany

Final Program

TIME	MONDAY 24TH OCTOBER General assembly meeting Innstr.43, building ITZ, room 005	TUESDAY 25TH OCTOBER Ubiquitous sensing technology Innstr.43, building ITZ, room 138	WEDNESDAY 26TH OCTOBER Research methodology & ethics Innstr.43, building ITZ, room 005	THURSDAY 27TH OCTOBER Workgroup meetings Innstr.43, building ITZ, room 222 and 235	FRIDAY 28TH OCTOBER Workgroup meetings Innstr.43, building ITZ, room 005 and 138
09:00 – 10:30	Arrival + registration.	Chair: *Kamil Kloch (UP)* • *Insights and learnings from the Opportunity Challenge.* *Kai Kunze (UP)* • Inertial sensors and orientation estimation. *Holger Harms (Thales)* • Discussion.	Chair: *Kamil Kloch (UP)* • Overview on ubiquitous sensing for activity & context. *Paul Lukowicz (UP)* • Tools and techniques for ground truth handling. *Leanne Loijens (NIT)* • Discussion.	Chair: *Oliver Amft* • Introduction to workgroups. *Oliver Amft (TUE)* • Pervasive service infrastructures. *Jakob Bardram, Thomas Pederson (ITU)* • Tools and techniques for ground truth handling. *Leanne Loijens (NIT), Oliver Amft (TUE)*	Workgroup meetings. (room 235 and room 138)
10:30 – 11:00		COFFEE BREAK			
11:00 – 12:30	Chair: *Oliver Amft (TUE)* • Welcome message & introduction. *Paul Lukowicz (UP)* • Fellow introductions *(5min per fellow)*	Chair: *Kai Kunze (UP)* • Long-term behaviour sensing. *Kristof van Laerhoven, (TU Darmstadt)* • Sound and vibration. *Oliver Amft (TUE)* • Discussion.	Chair: *Oliver Amft (TUE)* • Biomedical sensing. Jarno Riistama (PRE) • Physiological monitoring technology. *Jan Peuscher (TMS)* • Discussion.	Workgroup meetings. (room 222 and 235)	Chair: Oliver Amft (TUE) • Workgroups summary presentations *(20min each)*. • Event summary and feedback, closing.
12:30 – 14:00	LUNCH				Departure.

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14:00 – 15:30	Chair: *Paul Lukowicz (UP)* • Status of iCareNet, activities and event week programme. *Oliver Amft (TUE)* • Recruitment update. *Rianne van Eerd (TUE)* • Discussion on iCareNet objectives and milestones *(ALL)*	Chair: *Oliver Amft (TUE)* • Introduction into fabrics, woven sensing fibres. *Ivo Locher (SFA)* • Current R&D topics in textile electronics and sensing. *Gerhard Tröster (ETH)* • Discussion.	Chair: *Kamil Kloch (UP)* • How to do a PhD. *Jakob Bardram (ITU)* • Publication and peer-review. *Paul Lukowicz (UP)* • Research ethics. *Oliver Amft (TUE)*	Workgroup meetings. (room 222 and 235)	
15:30 – 16:00	COFFEE BREAK		<u>Starting at 15:30 latest:</u> Excursion to Mainkofen. (by bus) Meeting point: in front of the ITZ (Innstr. 43)	COFFEE BREAK	
16:00 – 18:00	Chair: *Rianne van Eerd (TUE)* • Discussion on iCareNet administration *(ALL)* • Planning of next milestones and project reviews. *Oliver Amft (TUE)* • Action points on recruitment. *Rianne van Eerd (TUE)*	Chair: *Kai Kunze (UP)* • Sensitive floors. *Axel Techmer (FS)* • Real-life Studies in Health Care – don't do it wrongly. *Agnes Gruenerbl (UP)* • Discussion.		Workgroup meetings. (room 222 and 235)	
19:00 – 21:00	WELCOME DINNER	Dinner at own	Dinner at own	Farewell party	

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MONDAY, 24TH OCTOBER

(General assembly meeting)
Attendance of a senior staff member of each beneficiary is required. Associated partners are cordially invited to participate.

Topics addressed:

- Status of iCareNet, activities and further plans.
- Discussion on Scientific and Training Objectives and accomplishments.
- Introductory presentations for iCareNet fellows.

TUESDAY, 25TH OCTOBER

(Sensing technology)

Sensing, signal processing and sensor networking (TO0):

Sensor choice is a key decision in designing context-aware systems. In addition, understanding the characteristics of the underlying sensors is instrumental to all other stages of context information.

The goal of this school, held by international experts on sensor technology, is to advance understanding and provide base knowledge on:

1. Sensor technologies, such as microelectronic-micromechanical systems and textile sensors, etc.
2. Processing of sensor signals, including de-noising, filtering, artifact removal, etc.
3. Networking concepts in sensor networks that are relevant for context-aware systems, including ad-hoc networks, messaging, failure handling, etc.

WEDNESDAY, 26TH OCTOBER

(Research methodology & ethics)

Developing a proper research methodology is essential during start-up phase of the fellows. The goal of this school is to introduce fellows to research methodology and ethical, at the highest quality standards and broaden understanding of:

1. Finding and establishing an independent research topic, including literature review, innovation process, hypothesis-based research.
2. Result dissemination through papers and presentations, including specific training on presentation skills (complementary to the local training of each partner).
3. Understand ethical consideration in research, peer-review processes and requirements (including new concepts, such as open reviews).
4. Detect and react to plagiarism.

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THURSDAY, 27TH OCTOBER

(Workgroup meetings)

Researcher workgroups will concentrate on advancing individual SOs (addressing TO0), related to several fellows in iCareNet. Workgroups will foster networking and team-work among the network fellows, as the organisational responsibility will reside mainly with the fellows themselves, thus addressing TO8. Workgroup topics will be selected according to arising needs of several iCareNet fellows and in the competence area of an organising partner. The deliverable of each workgroup is a technical report detailing the group's achievements.

The average duration of a workgroup collaboration will be 3 to 6 months. Meetings are planned for kick-off and conclusion of the workgroup aligned to school events, otherwise telephone and internet conferences are used to minimise travelling. Collaborative work sessions (up to 3 days) will be organised based on sound justification. The involved fellows will organise workgroup activities, such as the collaborative work meetings.

Workgroups	Organising partner
Pervasive service infrastructures (SO5). Research into, and specification of, a novel service frameworks that manage context information sourced in distributed wearable and ambient context systems that provide services for users or care provider information management systems. iCareNet focuses in particular on new techniques for interaction of mobile and ambient context services, as well as newly arising requirements for ad hoc collaboration of multiple mobile and ambient systems. The requirements for this infrastructure should be take from both the patient domain (i.e. personal pervasive healthcare technologies) as well as from the hospital domain (i.e. for close collaboration, treatment, and care done by clinicians inside a hospital).	ITU
Tools and techniques for ground truth handling (SO3). Ground truth is an essential prerequisite for context recognition. If not for identifying training data, then it remains important for context recognition algorithm evaluations. In this workgroup, we will investigate the state-of-the-art and recent trends in ground truth acquisition pertained to context recognition problems. Considered methods include complementary sensing, dynamic experience sampling, and (post) recording annotations. The WG will investigate existing tool chains for ground truth handling in multi-modal datasets (including video, high bandwidth sensors, such as audio, event-based sensors, etc.). Subsequently, the WG will focus on extending/realising a dataset-independent annotation tool to process large open context datasets.	NIT, TUE

Early workgroup achievements and plans for continuation shall be summarised during the school event.

FRIDAY, 28TH OCTOBER

(Workgroup meetings, summary)

For workgroup meetings see programme of October 27.

The school event will close with a workgroup summary presentation and feedback session in which participants can discuss the organisation and goals for future iCareNet school events.