

About IC0904-TwinTide

IC0904-TwinTide is a usability and user experience research community running under the auspices of COST (<http://www.cost.esf.org/>). TWINTIDE is the acronym for "Towards the Integration of Transectorial IT Design and Evaluation". The main objective of the Action is to harmonise research and practice on design and evaluation methodologies for computing artefacts, across sectors and disciplines.

Third-wave human computer interaction (HCI) is characterised by a diversifying user base and use contexts, new emphasis on user experience and new interaction styles. This implies a need for informed method choice sensitive to domains, user groups and system objectives. Effective method use requires complex judgments about applicability across applications and genres, with failure implying significant financial and human costs. The adoption of ICT across ages and abilities further increases the need for sound design and evaluation (D&E) methods, which bring about useful, usable, desirable computing artefacts that improve life quality. Effective cross-sectorial transfer of D&E methods is plausible and demonstrable. Relevant research work, however, is fragmented and scattered.

The Action aims to provide harmonization and leadership currently lacking in this field by bringing together researchers and D&E professionals. Their broad experience of D&E methods deployed in different sectors and disciplines enables comparison of method applications, assessing transferability of both established and novel approaches. These collaborative activities in Working Groups and open Workshops will facilitate production of a generic D&E method selection and application framework and scientific publications reaching the wider research community. The Action will also provide young interdisciplinary researchers with systematic training and networking opportunities such as STSMs (short-term scientific missions) and Training Schools.

Organization

The technical work of IC0904-TwinTide is driven by Chairperson (Effie Law), Vice-Chairperson (Mark Springett), Scientific-Coordinator (Gilbert Cockton), Dissemination Coordinators (Philippe Palanque & Marco Winckler) and four Working Group Coordinators and is supported by all the partners from the signatory countries.

Timetable

This four-year Action was launched in November 2009 and will run till October 2013. As of February 2010, there are 24 signatory countries with each of them having at most two representatives in the Management Committee (MC).

Scientific Program

Four major R&D activities will be implemented by of four Working Groups :

WG 1: Critical Reviews of D&E Method Potential and Value-Realisation in IT-enhanced Sectors

Coordinator: Gilbert Cockton



WG1 is responsible for Critical Reviews on Design and Evaluation (D&E) Method Potential and Value-Realisation in IT enhanced Sectors . This requires a range of foundational work, drawing on the knowledge and experience of WG1 members.

The management group worked with input from the Brussels meeting to draw a list of key tasks for WG1. These tasks range from (1) overviews of exemplar sectors through (2) detailed collection and analysis of sectors, (3) D&E methods, (4) relevant research methods and (5) relevant technologies. There are dependencies between WG 1 Tasks 1 and, Tasks 5 and 2, and Tasks 4 and 3. The acting WG1 leader is Gilbert Cockton (School of Design, Northumbria University, UK)

Please volunteer to lead and contribute to these tasks. Current task descriptions are:

1. Prepare overviews of key sector exemplars for TwinTide (e.g.: eLearning sector and social based sectors, including healthcare).
2. (a) Build and prioritise a list of sectors with information that may include: expertise/experience within TwinTide, relevant standards, critical issues, infrastructure dependencies and threshold concepts (<http://www.ee.ucl.ac.uk/~mflanaga/thresholds.html>), and with this (b) establish common understandings on boundary conditions for a sector by developing sector categories through considering further criteria including: critical aims (e.g., safety critical, high reliability), key constraints (e.g., inherent complexity), communities of practice, stakeholder types, markets, processes, products/services, SIC Codes (http://www.statistics.gov.uk/methods_quality/sic/contents.asp), technological platforms and tributary disciplines. With this in place (c) document and explore alternative conceptualisations of 'sectors' and 'domains' and (d) update deliverables for WG1 Task 1 above.
3. (a) Collect a critical mass of Analysis, D&E methods being used in a range of sectors and disciplines and create templates to describe and analyse these methods, making use of existing collections such as Engage (<http://www.designandemotion.org/society/engage/>) and with these (b) maintain a knowledge pool of analysed D&E methods and case studies, for our defined target audience
4. Develop and maintain a knowledge pool of appropriate research methods for researching methods in use, maintaining consistency with deliverables from WG1 Task 3.
5. Build a list of relevant technologies (e.g., Augmented reality), maintaining consistency with deliverables from WG1 Task 2, with information including: expertise/experience within TwinTide; impact on Design and/or Evaluation, relationship to sectors (e.g., CAD to production industries) and tools (e.g., transformation technologies), and critical issues associated with these technologies ■

<http://twintide.org/>

WG2: Transferability of D&E Methods across IT-enhanced Sectors



Coordinator: Chris Stary

The Working Group mediates between WG1 and WG4. Its goal is to set the stage for developing a notion and an operational framework for transferability of methods, as TwinTide aims to look across IT-enhanced sectors when studying D&E methods.

WG2 will utilize if not complement existing or evolving description frameworks for D&E method application. Essential inputs will come from WG 1, as its members will elicit qualities of D&E methods in various sectors.

In close cooperation with this WG value realization in specific contexts will be examined. When developing the concept of transferability of D&E methods it is likely we have to recognize the context of method applications, both in terms of elicitation and representation. Based on these inputs of WG1, WG2 members will investigate the extent to which D&E methods can be utilized in sectors other than those in which they have been developed or are currently used. Similar relations are given to WG3, as its members review quality models and standards in relation to D&E methods. There might be structural or operational inputs that are of relevance to merging or mapping method properties or elements. The results of WG2 will trigger the development of an integrated methodological framework for D&E methods, as described in the agenda of WG4 ■

From an operational perspective transferability of D&E methods will be studied along several tasks, as decided at our first plenary meeting in Brussels last year in a collaborative design effort: (i) Collection of documented attempts to transfer D&E methods across sectors, either being successful or having failed. Of particular interest are contributing disciplines as this information might help to ground our notion and concept of transferability on theory of science. In order to learn from existing experiences we also need to identify associated contributing factors when method transfer has been performed; (ii) Identification of criteria for assessing method transferability. This task is essential for the actual transfer of methods, as it tackles issues such as granularity of information and semiotic questions, in particular with respect to the expected outcome (value realization) when methods are transferred; (iii) Assessing (relative) importance of criteria to create a critical (optimal) set for assessing methods transferability between sectors. This set of activities deals with the applicability of achieved results in task (i) and (ii); (iv) Set up an inventory for target sectors identifies what D&E methods are missing for target sectors and from which sectors method users can get the missing elements for successfully applying a method in a target sector. This task allows taking sector-specific perspectives, as they might facilitate a practical, but still sound transfer of D&E methods ■

WG3 is responsible for Interplay between Design and Evaluation, Quality Models and Standards

Coordinator: Ebba Hvannberg

The main objective is to identify and critically review the quality attributes and software standards that are currently prioritized in design and evaluation processes in different sectors. Human-centred approaches to interactive software development have emphasised first usability and now user experience.

Some HCI researchers and practitioners propose specific qualities of successful interaction, such as Jeff Raskin's automaticity. However, other qualities are given prominence in other software practices, for example, creativity in digital media. In high dependency systems, some combination of safety, security and reliability is required, with these qualities thus prominent in software engineering practice and research in relevant application domains.



More recently, an emerging perspective within software engineering has stressed the quality of evolvability as being crucial to adapt alongside dynamic domain-specific models, user experiences, and organizational processes. The challenge in the development of interactive software is to balance these qualities, whether they relate to human usage, application performance or the software development process itself. Emphases on, and tradeoffs between, qualities vary with design purpose. Current task descriptions are:

1. Identify software in use qualities, e.g. trust, creativity, automaticity, security, safety, sociability, usability, reliability and evolvability. Examine how they vary over lifecycle and their dependency or interdependency on sectors. How they are prioritized, traded off and realized in software processes.
2. Identify which standards address emerging software qualities, such as trust, sociability, and creativity and what their impacts on real practice are
3. Understand iterative design-evaluation-redesign feedback cycles. How such cycles operate for different sectors. How they vary relative to specific evaluation criteria like social, economic, technical etc. How traceability can be tracked through the lifecycle.

WG3 Expected outcomes: A generic quality model for computing systems in a specific sector may be derived from the outcomes of the task WG3.1. Results of the task WG3.2 may lead to concrete proposals to the standardization bodies on the refinement of defining and operationalizing certain quality attributes. WG3.3 will contribute to the ongoing research on downstream utility of design and evaluation methods ■

WG4: Developing an Integrated Design & Evaluation Methods Framework

Coordinator: Arnold Vermeeren



WG4's aim is to develop an integrated Design & Evaluation (D&E) methods framework. Such a framework should help practitioners in selecting D&E methods for use in their specific situations. For example, in situations in which a specific product or software quality factor needs

be addressed within the constraints of a particular practical situation, the framework should inform the practitioner about relevant methods to choose from. Preferably, it also provides a mechanism for selecting a method that best fits the realities and constraints of the specific situation. It should help in answering questions like: Has the value of this method been proven in practice? Does this evaluation method also provide our designers with rich ideas that can inspire them? Can we use it to quantitatively measure something? What kind of expertise is required for being able to use this method? Could this method from industry sector A be easily adapted for use in our own sector B? Additionally, the framework should serve as a reference model for future development of HCI in terms of training, education and identifying opportunities for developing new methods.

Within TwinTide a bottom-up approach is chosen for developing this framework: WG1 studies qualities of D&E methods in various sectors, in terms of their potential for value realization in specific contexts; WG2 examines the extent to which D&E methods allow for use in sectors other than those in which they have been developed or are currently used (transferability of methods across sectors); WG3 studies quality models and standards in relation to D & E methods. In WG4 the information collected in these WGs is synthesized into an integrated methodological framework for D & E methods. Moreover, WG4 will also work on mechanisms for selecting methods that fit the requirements of a particular situation. This WG's activities consist of two main tasks: 1) synthesizing a framework of D & E methods, 2) developing decision support mechanisms for selecting D & E methods. Obviously, the majority of the work to be done in WG 4 will take place after some work has been done in WGs 1, 2 and 3. Therefore, WG4 has not started to take on its activities yet ■

Highlights on Partners

Turkey: HCI Research Fronts

Assist. Prof. Taner Eskil, Işık University

HCI in Turkey is gaining speed with support of The Scientific and Technological Research Council of Turkey. The HCI research is pioneered largely by research groups of major institutions such as Gebze Institute of Technology (GIT, İstanbul), Middle East Technical University (METU, Ankara) and Isik University (IU, İstanbul).

GIT's Human Computer Interaction Center (hci.gyte.edu.tr) hosts one faculty, 5 Ph.D. students and 6 M.Sc. students. The major research area of this center is attentive user interfaces through eye tracking, speech recognition and tracking user's other physical and biological conditions. The aim of this study is to monitor the user to augment and enhance her attentive capacities. Another focus of the center is the usability of state-of-the-art electronic devices, especially large screen TVs.

METU Human-Computer Interaction Research Group (hci.metu.edu.tr) was established in 2005. The group puts emphasis on dissemination of practical issues of HCI in Turkey as well as research to enhance the design and utilization of systems. Recently founded HCI Research and Application Laboratory enables researchers to carry out experiments in a controlled environment. The set up allows monitoring of the eye movements as well as computer screen shots to get real-time feedback from the subject.

METU-HCI takes practical application of the research one step further by giving support to departments in development of their interfaces, such as web pages. This study has been fruitful in producing platforms that have effective and efficient interfaces for joint research, cooperation with other universities, the public and the private sectors.

Isik University's Pattern Intelligence Laboratory (PILAB, pi.isikun.edu.tr) was established in 2008. The laboratory has 2 faculties, 2 Ph.D. students, and 4 M.Sc. students. The major research direction of the laboratory is Pattern Recognition and Artificial Intelligence, including practical applications for automation in the manufacturing industry. The HCI involvement of the PILAB has started with the project titled "Expression Recognition Based on Facial Anatomy", funded by EU ICT COST Action IC0904. The primary motivation of this research is to study facial expression recognition to achieve more effective means for human-computer interaction. Successful results in this field will allow detection of psychological states such as boredom, fatigue and stress, detection of physical condition of personnel which may be unsuitable for critical tasks (e.g. pilots, drivers, and system

security personnel), development of earlywarning systems and avoidance of accidents. The project is scheduled to end in September 2012. The initial outcomes of the project confirm that it is possible to track facial feature points precise enough to determine the dynamics of underlying anatomical model of the subject.

This work is carried out under the "Expression Recognition based on Facial Anatomy" (109E061) Project. The project is supported by EU ICT COST Action IC0904 and The Scientific and Technological Research Council of Turkey (TUBITAK), Scientific and Technological Research Projects Programme.

References: M. Pantic, M.F. Valstar, R. Rademaker and L. Maat, "Web-based database for facial expression analysis", Proc. IEEE Int'l Conf. on Multimedia and Expo (ICME'05), Amsterdam, The Netherlands, July 2005.

Ireland: The National e-Learning Laboratory

Dr. Stephan Weibelzahl, National College of Ireland

The National e-Learning Laboratory (NELL) is part of National College of Ireland in Dublin. We specialise in usability testing and user experience with a particular focus on e-Learning. We engage in applied research directed at user-oriented testing to support good design for e-learning, and other Internet based applications. In particular we are interested in evaluating the students' learning experience in terms of the quality of engagement, efficiency, effectiveness and usability. The term e-Learning is used here in its broadest sense and comprises applications as diverse as on-line courses, adaptive learning systems, collaborative learning, on-line tutoring and tutor support programmes.

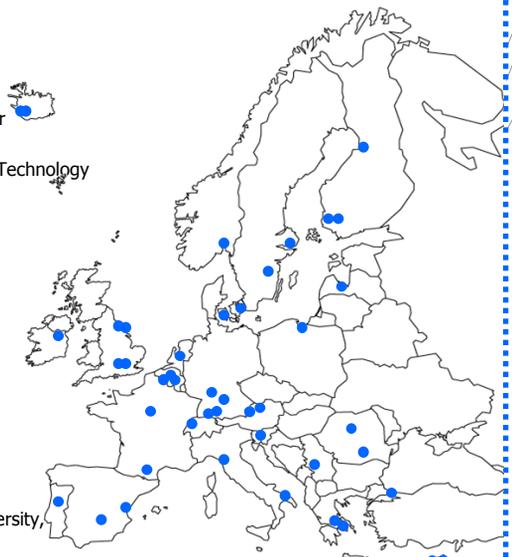
The laboratory itself comprises hardware and software for observing and recording user behaviour and user interactions at up to four work stations in parallel. Data collected include different video & audio streams, screen recordings, mouse & keyboards logging and gaze-tracking (SMI RED4).

To date, researchers in NELL have been involved in a variety of different usability research projects with organisations both large and small. We have worked with a number of SME's on different projects ranging from usability testing of on-line maths and accountancy support programmes through to a research project analysing what people look at when presented with the results of a Google Search page.

In TwinTide, we would like to further explore the role of user experience in the application domain of e-Learning. While learning on-line can take various forms, there seem to be a number of characteristics that are common across different scenarios and which differentiate e-Learning from other on-line activities. Most prominent among these characteristics is the fact that the system goal is to facilitate learning rather than to accomplish a task in the most efficient way. We are looking forward to learn more about this exciting area over the course of this project. More information at <http://www.ncirl.ie/nell> and <http://nellatnci.wordpress.com> ■

- Austria:** University of Linz, ICT&S/ Universität Salzburg
- Belgium:** Catholic University of Louvain, Centre for User Experience Research, University of Liege
- Cyprus:** University of Cyprus, Cyprus University of Technology
- Denmark:** University of Copenhagen, Aalborg University
- Iceland:** University of Iceland, Reykjavik University
- Ireland:** National College of Ireland
- Italy:** Università di Bari, ISTI-CNR
- Finland:** Technical Research Centre of Finland, University of Oulu, Nokia Research Center
- France:** INRIA-Rocquencourt, University Paul Sabatier
- Germany:** Augsburg University of Applied Science, University of Konstanz, University of Technology Darmstadt, University of Freiburg
- Greece:** Aristotle University, University of Piraeus
- Latvia:** University of Daugavpils
- Netherlands:** TU Delft, Philips
- Norway:** SINTEF
- Poland:** Gdansk University of Technology
- Portugal:** University of Coimbra
- Romania:** ICI Bucuresti, Babes-Bolyai University
- Serbia:** University of Novi Sad
- Slovenia:** Institut Jozef Stefan
- Spain:** Technical University of Valencia, Universidad de Castilla-La Mancha
- Sweden:** Uppsala University, Linköping University
- Switzerland:** ETH Zürich
- United Kingdom:** University College of London, Middlesex University, Northumbria University, Brunel University
- Turkey:** Işık Üniversitesi

Partners



Collaboration Instruments in TwinTide

Meetings of Management Committee (MC) are held in conjunction with those of the four WGs on a regular basis. The primary goals of the meetings are to deal with emerging issues and needs, to consolidate the ideas and findings that have been collected in the meantime, and to identify new research areas that are necessary and worthy to pursue.

Annual Open Workshop: It is a valuable instrument to facilitate a link between the TwinTide community and the HCI community at large. In anticipation of international attendance, our workshops are normally held in conjunction with established HCI conferences and calls for participation are issued to different channels.

Short Term Scientific Mission (STSM): STSMs are exchange visits of researchers to the institutes of the community members to perform some specific studies or experiments, thereby enabling mutual enhancement of expertise and experience.

Multi-site Experiments (MSE): MSE are coordinated to validate research ideas and concepts on a large-scale across expertise, domains and cultural contexts. Several MSEs on different themes are currently being organized, including validation studies on merging, coding and rating problem sets as well as usability problems classification.

Training/Summer School: It offers Ph.D. students the opportunity to know more the current development of the field. Currently, the opportunities to realize this instrument are being explored.

Tools and how to get informed

IC0904-TwinTide Digital Library: <http://twintide.org/dl.php>
The public part contains both draft and final version of working documents as well as deliverables of the project. Recently added documents include instruments for evaluating and slides illustrating the interconnections between the four WGs and the interfaces between the WGs and partner projects. The private part (restricted to members) contains draft documents that are currently under development by the working groups.

Mailing List: To keep updated about news, events and current activities, join [twintide-announcement](http://listes.irit.fr/www/info/twintide-announcement) mailing list at: <http://listes.irit.fr/www/info/twintide-announcement>

IC0904-TwinTide Newsletter is available for download at: <http://twintide.org/newsletter/>

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Upcoming IC0904-TwinTide Events

2nd Management Committee Meeting

Organizer: Gilbert Cockton

Contact : gilbert.cockton@northumbria.ac.uk

Dates: March 3-4, 2010

Web page :

<https://www.conferencebookings.co.uk/delegate/NGITWIN TIDE2010>

Related IC0904-TwinTide Events

SAC'2010 (HCI track): ACM Symposium on Applied Computing

Lausanne, Switzerland ♦ March 22-26 2010

<http://oldwww.acm.org/conferences/sac/sac2010/>

CHI 2010: ACM SIGCHI Conference on Human Factors in Computing Systems

Atlanta, GA, USA ♦ April 10-15 2010

<http://www.chi2010.org/>

AVI 2010: Int. Conference on Advanced Visual Interfaces
Roma, Italy ♦ May 26-28 2010

<http://hci.uniroma1.it/avi2010/>

EuroITV'10: 8th Int. Interactive TV&Video Conference

Tampere Finland ♦ June 6-9 2010

<http://www.euroitv2010.org>

EICS 2010: Engineering Interactive Computing Systems
Berlin, Germany ♦ June 21-23 2010

<http://eics2010.org/>

DIS 2010: Designing Interactive Systems

Aarhus, Denmark ♦ August 16-20 2010

<http://www.dis2010.org>

MobileHCI 2010: 12th Int. Conference on Human Computer Interaction with Mobile Devices and Services

Lisbon, Portugal ♦ September 8-10 2010

<http://www.mobilehci09.org>

HCIS 2010: Human Computer Interaction Symposium in conjunction with the IFIP World Computer Congress 2010
Brisbane, Australia ♦ September 20-23 2010

<http://www.wcc2010.com/hci2010/>

UbiComp '10: ACM Conference on Ubiquitous Computing
Copenhagen, Denmark ♦ September 26-29

<http://http://www.ubicomp2010.org/>

HCSE 2010: 3rd Conference on Human-Centred Software Engineering

Reykjavik Iceland ♦ October 14-15 2010

<http://www.swt.informatik.uni-rostock.de/HCSE2010/>

NordiCHI '10: 6th Nordic Conference on Human-Computer Interaction

Reykjavik Iceland ♦ October 16-20 2010

<http://www.nordichi2010.org>

HCI-Aero 2010: International Conference on Human-Computer Interaction in Aerospace

Cape Canaveral, Florida, USA ♦ November 3-5 2010

<http://ihmc.us/hci-aero2010>

CHI 2011: ACM SIGCHI Conference on Human Factors in Computing Systems

Vancouver, Canada ♦ Mai 7-10 2011

<http://www.chi2011.org/>

HCI International 2011

Orlando, Florida, USA ♦ July 9-14 2011

<http://www.hcii2011.org/>

INTERACT 2011: 13th IFIP TC13 Conference on Human-Computer Interaction

Lisbon, Portugal ♦ September 5-9 2011

<http://www.interact2011.org/>