HAL
open science

# User Interface eXtensible Markup Language SIG

Gaëlle Calvary, Olivier De Wasseige, David Faure, Jean Vanderdonckt

## To cite this version:

Gaëlle Calvary, Olivier De Wasseige, David Faure, Jean Vanderdonckt. User Interface eXtensible Markup Language SIG. 13th International Conference on Human-Computer Interaction (INTERACT), Sep 2011, Lisbon, Portugal. pp.693-695, 10.1007/978-3-642-23768-3_119 . hal-01596993

**HAL Id: hal-01596993**

**https://inria.hal.science/hal-01596993v1**

Submitted on 28 Sep 2017

**HAL** is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

Distributed under a Creative Commons Attribution 4.0 International License

# User Interface eXtensible Markup Language SIG

Gaëlle Calvary[1], Olivier de Wasseige[2], David Faure[3], Jean Vanderdonckt[4]

[1]Laboratoire d'Informatique de Grenoble, Equipe Ingénierie de l'IHM
Campus de Grenoble - 385, Rue de la Bibliothèque
BP 53 – F-38041 Grenoble Cedex 9 (France) - gaelle.calvary@imag.fr
[2]Defimedia, Parc Crealys, Rue Phocas Lejeune, 32 – B-5032 Gembloux (Belgium)
olivier.dewasseige@defimedia.be
[3]Thales Research & Technology France - Campus de Polytechnique
F-91767 Palaiseau Cedex (France) - david.faure@thalesgroup.com
[4]Université catholique de Louvain, Louvain School of Management – www.lilab.be
Louvain Interaction Laboratory, Place des Doyens 1 – B-1348 Louvain-la-Neuve (Belgium)
jean.vanderdonckt@uclouvain.be

**Abstract.** A User Interface Description Language (UIDL) is a formal language used in Human-Computer Interaction (HCI) in order to describe a particular user interface independently of any implementation. Considerable research effort has been devoted to defining various meta-models in order to rigorously define the semantics of such a UIDL. These meta-models cover different aspects: context of use (user, platform, environment), task, domain, abstract user interface, concrete user interface, usability (including accessibility), workflow, organization, evolution, program, transformation, and mapping. A complete development method is typically made up of the following elements: models that capture various aspects of an interactive application (compliant with the previous meta-models), a language that expresses these models, a development life cycle, and software that support this method. This Special Interest Group is aimed at presenting User Interface eXtensible Markup Language (UsiXML), a particular UIDL that is of interest to a wide audience. Then, the UsiXML End User Club is introduced so that any person, group, or organization could observe, test, or contribute to the UsiXML technology. The SIG will present the potential benefits so that everyone can use it.

**Keywords:** user interface description language (UIDL).

## Interest and Relevance

A User Interface Description Language (UIDL) [2,4] is a formal language used in Human-Computer Interaction (HCI) in order to describe a particular User Interface (UI) independently of any implementation technology. As such, a UI may involve different interaction modalities (e.g., graphical, vocal, tactile, haptic, multimodal), interaction techniques (e.g., drag and drop) or interaction styles (e.g., direct manipulation, form filling, virtual reality). A common fundamental assumption of most UIDLs is that UIs are modeled as algebraic or model-theoretic structures that include a collection of sets of interaction objects together with behaviors over those sets. Significant examples of UIDLs include: UIML (www.uiml.org), useML (http:// www.uni-kl.de/pak/useML/), MariaXML, UsiXML (www.usixml.org), and XIML (www.ximl.org). Various UIDLs have been subject to discussion, understanding their common

ground and their subsumed approach, a comparative analysis [4], and their consideration for standard [2]. A UIDL can be therefore used during:

- *Requirements analysis*: in order to gather and elicit requirements.
- *Systems analysis*: in order to express specifications those address the aforementioned requirements.
- *System design*: in order to refine specifications depending on the context of use.
- *Run-time*: in order to realize a UI via a rendering engine.

This Special Interest Group (SIG) is manifold:

- To present to a public audience the last version of UsiXML V2.0 (User Interface eXtensible Markup Language – http://www.usixml.org, http://itea.defimedia.be) in terms of coverage (e.g., its support of the Cameleon Reference Framework (CRF) [1] and Similar Adaptation Space (SAS) [5]: who can use UsiXML today and for which purpose?
- To introduce the audience to the models, the language, the syntax, the method, and the software that support the method based on live demonstrations: how to produce a task and domain model that is transformed into an abstract UI (independent of any modality), which is in turn transformed into a concrete UI (independent of any platform, but with a chosen modality) and code generation. This will be illustrated with UI generation in HTML, Java, and Tcl/Tk on multiple platforms (e.g., desktop, laptop, and smartphones).
- To discuss ongoing issues for standardization of user interfaces as defined in the mission statement of the W3C Group on Model-Based User Interface Design []: what are the pros and contras of a standard UIDL
- To invite any individual person, group, community of practice or organization to be part of the **UsiXML End User Club** in order to observe, test, or contribute to the UsiXML technology based on model-driven engineering [6].

## References


1. Calvary, G., Coutaz, J., Thevenin, D., Limbourg, Q., Bouillon, L., and Vanderdonckt, J. A Unifying Reference Framework for Multi-Target User Interfaces. Interacting with Computers 15, 3 (2003) pp. 289–308.
2. J.M. Cantera Fonseca (Ed.), Model-based User Interface XG Final Report, W3C Incubator Group Report, W3C, 4 May 2010. Accessible at: http://www.w3.org/2005/Incubator/model-based-ui/XGR-mbui-20100504/
3. Faure, D., Vanderdonckt, J., (Eds.), Proc. of 1st Int. Workshop on User Interface Extensible Markup Language UsiXML'2010 (Berlin, 20 June 2010). Thales Research and Technology France, Paris, 2010. ISBN 978-2-9536757-0-2.
4. Guerrero-García, J., González-Calleros, J.M., Vanderdonckt, J., and Muñoz-Arteaga, J. A Theoretical Survey of User Interface Description Languages: Preliminary Results. In Proc. of LA-Web/CLIHC'2009 (Merida, November 9-11, 2009), IEEE Computer Society Press, Los Alamitos, 2009, pp. 36-43.
5. Vanderdonckt, J., Coutaz, J., Calvary, G., and Stanciulescu, A. Multimodality for Plastic User Interfaces: Models, Methods, and Principles. In: D. Tzovaras (ed.), Multimodal user interfaces: signals and communication technology, Lecture Notes in Electrical Engineering, Springer, 2007, pp. 61-84.

6. Vanderdonckt, J. Model-Driven Engineering of User Interfaces: Promises, Successes, and Failures. In: Proc. of 5th Annual Romanian Conference on Human-Computer Interaction ROCHI'2008 (Iasi, September 18-19, 2008). Matrix ROM, Bucharest (2008), pp. 1–10.